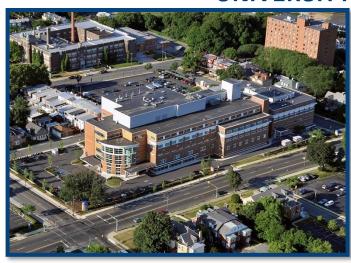# St Luke's
UNIVERSITY HEALTH NETWORK

Allentown and Sacred Heart Campuses
Star Community Health
Community Health Needs Assessment

June 2022

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St. Luke's and Star Community Health Partner Quote (Key Informant/Community Forum Attendee)

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Key Findings

From our analysis of primary and secondary data, as well as the Community Health Needs Assessment (CHNA) key informant interviews and work with our community members, we see significant issues facing our communities that impede healthy lifestyles. Our efforts in prevention, care transformation, research, and partnerships help support our work to promote sustainable programs and opportunities for our reach to focus on a wide range of health promotion and quality of life initiatives. While there are many issues that need to be addressed, the results from the 2022 CHNA found the top priorities for the St. Luke's network and Star Community Health include:

2022 Community Health Needs Assessment
Top Priority Outcomes
COVID-19
Access to Care
Workforce Development
Food Insecurity
Obesity Reduction
Physical Activity Promotion
Mental Health
Opioids and other Substance Use
Housing
Transportation

The needs discussed within the health categories outlined in this document will serve as our guide in creating a detailed campus-specific implementation plan to best address the specific needs of the St. Luke's Allentown, Sacred Heart, and Star Community Health service areas using three pillars:

*Wellness and Prevention	*Care Transformation	*Research and Partnerships

We will work collaboratively in partnership with our community and network partners to create a more equitable society with better health outcomes, especially among our most vulnerable populations such as our Hispanic communities, seniors, women, and children.

Introduction

Background

As part of the Patient Protection and Affordable Care Act, nonprofit hospitals are required to conduct a Community Health Needs Assessment (CHNA) every three years to maintain tax-exempt status under section 501(c)(3) of the Internal Revenue Code. The goal of the assessment is to identify critical health disparities faced by residents within St. Luke's University Health Network (SLUHN) service areas. The assessments state health priorities unveiled by community stakeholders, hospital professionals, and public health experts. Additionally, regional implementation plans will be crafted to build collaborative partnerships to determine the allocation of resources to address the specified health needs. To view our previous CHNA reports, please refer to the following link: https://www.slhn.org/community-health/community-health-needs-assessment. If you have any questions regarding any of these reports, please contact the Department of Community Health at (484) 526-2100.

Methodology

The CHNA is comprised of both primary and secondary data. The primary data were collected through three methods. First, key informant interviews were performed with leaders from each campus community to identify high level strengths and needs in their respective communities. A list of the interview questions can be found in Appendix A. Second, a community forum was held for each campus community through SLUHN and facilitated by Dr. Christopher Borick of Muhlenberg College. A list of organizations represented at the forum can be found in Appendix B. Due to the COVID-19 pandemic, key informant interviews were conducted through Microsoft Teams and the community forums were conducted through Zoom. Third, 11,523 voluntary community health surveys were administered throughout our fourteen campus geographic regions, where the main priority health needs were identified for each entity, with 2,092 collected from the top 80 percent of zip codes serving the Allentown and Sacred Heart service area. This assessment and data collection was also conducted in collaboration with Star Community Health, as the service areas and populations overlap. We used snowball sampling to reach respondents, especially those represented in our vulnerable populations. Snowball sampling is most effective when used to reach vulnerable populations to help to shed light on the social determinants of health (SDOH) within hard-to-reach populations. To reach populations with diverse resources, surveys were completed in either paper or digital format. The survey findings document, also posted online, lists questions and responses recorded from CHNA surveys conducted in 2012, 2016, 2019, and 2022. Secondary data included the use of hospital network data as well as county, state, and national level data obtained from the following: U.S. Census, the Robert Wood Johnson Foundation, Vital Statistics, Community Commons, the American Community Survey (ACS), U.S. Department of Labor, the Behavioral Risk Factor Surveillance

System, as well as other data sources, which can be found in the footnotes. The needs identified in the interviews and community forums were supplemented by the survey data and secondary data to provide a comprehensive picture of the contributing factors and needs in the

·········· Existing Allentown and Sacred Heart Community Assets ··········

When describing Allentown, all key informants agreed that there is a strong sense of community with a diverse, multi-cultural, multi-racial, and multi-lingual population. One key informant stated, "in the school district alone, I think [there are] 21 different languages that are spoken." Another mentioned that "we have blended cultures, which is a tremendous strength because the resiliency that comes from those cultures is contagious." Finally, a key informant said "the people are brilliant, the people are beautiful, the people are full of love. You have people from all over the world, you have people with connections."

In 2019, Sacred Heart began the Summer Lunch Program, which ran from June 14th to August 30th and served 762 meals to any child 0-18 years old. The meals were also accompanied with 182 shares of fresh fruits and vegetables distributed and over 170 backpacks with non-perishable goods for families. On July 1, 2019 in partnership with Workforce LV, Sacred Heart became the first hospital campus in the state to open a full-service Career Link office. Since the opening, the Career Link office has served over 1,000 community members and provides services such as job placement, resume building, job and skill trainings, incentives for employers, and case management. This partnership has also created a pipeline for jobseekers to gain employment in the St. Luke's network. On September 20, 2019, the Sacred Heart campus hosted the inaugural Social Determinants of Health (SDOH) Symposium. The goal of the symposium was to hear from national, state, and local community leaders on how they are addressing the SDOH in their work and how we can continue to overcome barriers to education, care, and health promotion. More than 100 community partners attended the symposium.

In response to COVID-19, the Community Health department and Parish Nurse Team worked closely with Lehigh and Northampton counties, Allentown and Bethlehem cities, and other health and community-based organizations to design and implement a process to quarantine and isolate homeless COVID-19 positive patients. Patients were placed in a hotel room where they could quarantine for 14 days, be monitored by the Parish Nurse Team, and were provided food by Meals on Wheels. Nineteen patients were placed and the majority either transitioned into more permanent housing or moved to inpatient rehab centers to address issues related to addiction. Throughout the pandemic, SLUHN has been able to pivot and meet the needs of the community through existing relationships built with nonprofits, schools, and community-based organizations who have assisted in events, education, and providing support in our service areas.

"the local organizations were exceptional, pulling together during in the pandemic. The strong health care networks, and the United Way having community calls every Monday to share information were very helpful."

County Health Rankings

Every year, the Robert Wood Johnson Foundation releases data that compare counties to state averages, as well as U.S. top performers. Figure 1 depicts select health indicators for 2021 for each of the counties in SLUHN's service area. There are 20 indicators evaluated for each county with the US top performers being the counties at the 90th percentile for the nation. Indicators are color-coded using a stoplight approach, in which green indicates that the value is better than both state and U.S. top performers, yellow indicates that the value is between state and U.S. top performers, and red indicates that the value is at or worse than both state and U.S. top performers.

In looking at the 2021 data table out of 180 values, 60% of values are red (108), 21% are yellow (38), and 19% are green (34). There has been a 47.8% overall increase in green tiles, previously 23 total, since 2018 during the last CHNA cycle. Additionally, in Lehigh county, there are 85% red values, 0% yellow values, and 15% green values. Since 2018, 6 values changed from yellow to red, and one value changed to green.

The Robert Wood Johnson Foundation reports their findings as the year 2021, but many of the measures are reported from previous years. Please see https://www.countyhealthranking s.org/ for more information.

2021	U.S. Top Performers*	Pennsylvania (PA)	Berks (BR) County, PA	Bucks (BU) County, PA	Carbon (CR) County, PA	Lehigh (LH) County, PA	Monroe (MO) County, PA	Montgomery (MT) County, PA	Northampton (NO) County, PA	Schuylkill (SC) County, PA	New Jersey (NJ)	Warren (WA) County, NJ
Unemployment	2.6%	4.4%	4.3%	3.8%	5.4%	4.5%	5.4%	3.5%	4.5%	5.4%	3.6%	3.3%
Uninsured	6%	7%	7%	5%	6%	8%	8%	5%	6%	6%	9%	7%
Primary care physicians	1,030:1	1,230:1	1,600:1	1,180:1	2,380:1	990:1	2,420:1	730:1	1,210:1	1,870:1	1,180:1	1,680:1
Dentists	1,210:1	1,410:1	1,780:1	1,150:1	2,290:1	1,130:1	2,580:1	920:1	1,700:1	2,210:1	1,140:1	1,350:1
Poor physical health days	3.4	4.0	4.0	3.1	4.3	4.1	4.0	3.3	4.0	4.5	3.7	3.9
Food environment index	8.7	8.4	8.6	9.1	8.3	8.4	8.0	9.1	8.7	8.3	9.4	8.7
Physical inactivity	19%	22%	22%	18%	24%	17%	24%	18%	27%	24%	27%	28%
Access to exercise opportunities	91%	84%	86%	89%	75%	82%	86%	95%	87%	75%	95%	97%
Adult obesity	26%	31%	34%	28%	34%	31%	33%	25%	31%	37%	27%	32%
Excessive drinking	15%	20%	21%	23%	22%	22%	20%	22%	22%	21%	16%	21%
Adult smoking	16%	18%	20%	16%	23%	18%	20%	14%	19%	23%	13%	17%
Poor mental health days	3.8	4.7	4.6	4.4	5.1	4.7	4.9	4.4	4.7	5.2	3.8	4.6
Mental health providers	270:1	450:1	680:1	390:1	1,600:1	510:1	830:1	280:1	420:1	1,210:1	420:1	470:1
Low birthweight	6%	8%	8%	8%	9%	8%	9%	7%	8%	8%	8%	8%
Teen births	12	17	21	6	19	21	11	7	12	22	12	9
Sexually transmitted infections	161.2	463.4	475	245.1	175.4	511.9	367.8	295.1	411.0	244.8	405.5	206.9
High school graduation	94%	91%	87%	94%	89%	89%	90%	94%	91%	89%	90%	91%
Children in poverty	10%	17%	16%	7%	14%	18%	17%	7%	10%	16%	12%	9%
Severe housing problems	9%	15%	15%	15%	14%	16%	18%	15%	14%	11%	21%	15%
Social associations	18.2	12.2	11.4	7.7	13.9	10.2	7.6	11.2	10.6	13.2	8.7	9.5

University of Wisconsin Population Health Institute. *County Health Rankings and Roadmaps.* 2021.	KEY	At or above State/Top Performer	Between Top Performers and State	At or below State/Top Performer

Figure 1

Demographics

Population

For the purposes of the CHNA, we define the top zip codes as those that account for 80% of the population served by the Allentown and Sacred Heart campuses and Star Community Health (i.e., service area) located in Lehigh county (Figure 2). In the Allentown, Sacred Heart, and Star Community Health service area, 42% of patients reside in Lehigh county zip codes 18102, 18103, and 18104. These remained the same as the previous 2019 CHNA.[1]

A total of 365,473 people live in the 316.11 square mile area outlined in Figure 3 according to the U.S. Census Bureau American Community Survey (ACS) 5-year estimates (2015-2019). The population density for this area is estimated at 1156.17 persons per square mile, compared to 285.89 persons per square mile in Pennsylvania and 91.93 persons per square mile nationally. The 2010 Decennial Census reported that 94% of the Allentown, Sacred Heart, and Star Community Health service area lives in an urban setting and 6% of the service area lives in a rural setting. Urban areas are defined by population density, count, size thresholds, and the amount of impervious surface or development (i.e., areas impervious to water seeping into the ground, concrete-heavy areas). Rural areas are

FY20 SLA & SLSH - Zip Codes Comprising Top 80% of Facility Encounters		
Zip Code	% SLA & SLSH Total (n =338,887)	% Network Total (n = 1,554,201)
18102	20%	4.5%
18103	12%	2.5%
18104	10%	2.2%
18052	7%	1.6%
18062	5%	1.1%
18109	4%	0.9%
18049	3%	0.8%
18067	3%	0.7%
18101	2%	0.4%
18080	2%	0.4%
18031	2%	0.3%
18032	2%	0.3%
18037	1%	0.3%
18106	1%	0.3%
18088	1%	0.3%
18069	1%	0.3%
19526	1%	0.3%
18015	1%	0.3%
18078	1%	0.2%
Total	80%	17.50%

Figure 2

[1] https://www.slhn.org/community-health/community-health-needs-assessment/-/media/418A358C05374A14B1AD637672CF698E.ashx

all other areas not defined as urban. The Pennsylvania percentages for urban and rural living are 78.7% and 21.3%, respectively. The United States urban and rural percentages are 80.9% and 19.1%, respectively.

The following sections give a brief overview of the population that St. Luke's Allentown, Sacred Heart, and Star Community Health serves. Understanding the demographics of the serv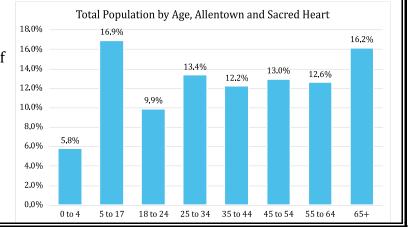ice area is essential to addressing need and improving upon the region's health services. The following data comes from ACS 5-year estimates (2015-2019) by the Census Bureau and St. Luke's CHNA survey unless otherwise stated.[2] Please refer to the Network and Campus Community Health Needs Assessment Survey Findings document for more detailed information from the survey.

Population Density Allentown & Sacred Heart

Map Legend

Population, Density (Persons per Sq Mile) by Tract, ACS 2015-19
- Over 5,000
- 1,001 - 5,000
- 501 - 1,000
- 51 - 500
- Under 51
- No Data or Data Suppressed

Report Location, ZIP code

Figure 3

https://lehighvalleyhub.org/map-room/, 2/16/2021

Age

The ACS reports that 22.7% of the service area population are people under 18 years old and 16.2% are 65 years and older (Figure 4). Combined, these groups account for 38.9% of the service area population, leaving 61.1% between the ages of 18 and 64. In Lehigh county, 22.7% of the population are people under 18, 16.5% are 65 and older, and 60.8% are between the ages of 18 and 64. In Allentown city, 26.4% are under the age of 18, 61.7% are ages 18 and 64, and 11.9% are 65 and older.

Figure 4

Total Population by Age, Allentown and Sacred Heart

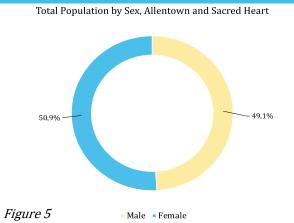| Age	%
0 to 4	5.8%
5 to 17	16.9%
18 to 24	9.9%
25 to 34	13.4%
35 to 44	12.2%
45 to 54	13.0%
55 to 64	12.6%
65+	16.2%

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[2] https://www.census.gov/programs-surveys/acs/

Most CHNA survey respondents from the Allentown, Sacred Heart, and Star Community Health service area were 55 and older; 22% were 55-64 years old and 35% were 65 and older. The smallest age group was 18-24 years old (3%). Respondents 45 to 54 years old accounted for 17%, 13% ages 35 to 44, and 10% ages 25 to 34. The CHNA survey was only administered to people 18 and older, therefore, younger ages are not reflected in the sample. The median age of respondents was 59 years old.
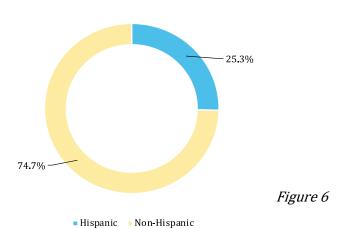
Sex

According to 2015-2019 5-year estimates by the ACS, 50.9% of people identified as female and 49.1% identified as male in the St. Luke's Allentown, Sacred Heart, and Star Community Health service area (Figure 5). This is similar to the national average, 50.8% and 49.2%, respectively. In Lehigh county, 51.1% of people identify as female and 48.9% as male. In Allentown city, 51.1% of people identify as female and 48.9% as male.

When asking CHNA survey respondents about sex assigned at birth in the survey, 63% indicated female and 37% indicated male.

Total Population by Sex, Allentown and Sacred Heart

50.9%   49.1%

Figure 5   ▪ Male ▪ Female

Ethnicity

Total Population by Ethnicity, Allentown and Sacred Heart

25.3%

74.7%

Figure 6

▪ Hispanic ▪ Non-Hispanic

According to ACS data, in the St. Luke's Allentown, Sacred Heart, and Star Community Health service area, 74.7% of the population identifies as non-Hispanic and 25.3% identifies as Hispanic (Figure 6). The population in Pennsylvania is 92.7% non-Hispanic and 7.3% Hispanic; the United States population is 82% and 18%, respectively. In Allentown city specifically, 52.5% of people identify as Hispanic and 47.5% of people identify as non-Hispanic, the largest Hispanic population in the St. Luke's service area.

In the Allentown, Sacred Heart, and Star Community Health service area, 81% of survey respondents did not identify as Hispanic, while 19% identify as Hispanic.
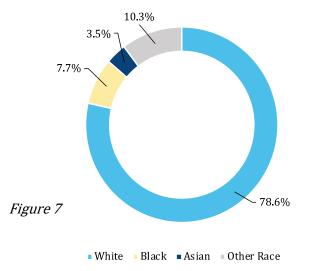
Race

The ACS reports a majority (78.6%) of the service area identifies as White, followed by Other Race (10.3%) and Black (7.7%). Data for individuals identifying as Native Hawaiian/Pacific Islander, Native American/Alaska Native, Other Race, and Multiple Races were combined into Other Race due to small sample sizes.

In Lehigh county, the majority of the population identifies as White (79.3%), followed by Other Race (10%), Black (7.4%), and Asian (3.3%). In Allentown city, 62.3% of people identify as White, followed by Other Race (20.1%), Black (14.7%), and Asian (2.9%).

The majority of CHNA survey respondents from the Allentown, Sacred Heart, and Star Community Health service area were White (81%), followed by Other Race (11%), Black (6%), and Asian (2%).

Total Population by Race, Allentown and Sacred Heart

Figure 7

Legend: White, Black, Asian, Other Race

10.3%
3.5%
7.7%
78.6%

"We have blended cultures, which is a tremendous strength because the resiliency that comes from those cultures is contagious"

Vulnerable Populations

The following data was retrieved from the 5-year American Community Survey (2015-2019) by the Census Bureau unless otherwise noted.[3]

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[3] https://www.census.gov/programs-surveys/acs/
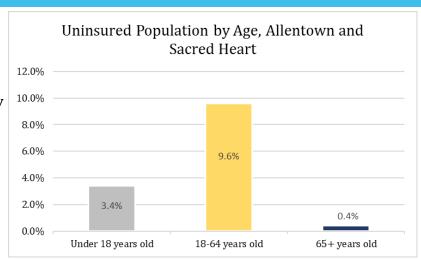
Black, Indigenous, People of Color (BIPOC)

It is important to identify the BIPOC communities within the SLUHN service area to address specific needs. For example, Indigenous peoples historically lack proper access to health resources and information and often face discrimination when accessing healthcare facilities.[4] Additionally, in regard to the COVID-19 pandemic, more than half of the infections have occurred among Black Americans, despite only comprising approximately 14% of the United States population.[4,5] Disparities in access to care for BIPOC communities can be detrimental to health outcomes and generate mistrust in healthcare.[6] In the Allentown, Sacred Heart, and Star Community Health service area, 7.7% of the total population identifies as Black and 25.3% of the total population identifies as Hispanic. Out of the BIPOC individuals who were surveyed for the network, 33% identified as Other Race, followed by Black (32%), Multiple Races (23%), Asian (10%), and American Indian or Alaskan Native (2%).

"Structural racism continues to be a major issue in the Lehigh Valley, and it must be considered when we appraise the health of the community."

Uninsured Population

Lack of insurance or adequate coverage is a primary barrier to healthcare because it prevents people from accessing crucial services required to monitor and maintain a healthy lifestyle. Medicare, a federal healthcare program in the United States available to most of the population ages 65 years and older, helps to nearly eliminate the uninsured population in that age demographic, with only 0.4% in Pennsylvania and 0.8% in the United States ages 65 years and older uninsured. While Medicare is available to most of the population over 65 years old, lack of health insurance, or adequate health insurance, can lead to serious barriers to care. Of the population less than 65 years old, 7% in Pennsylvania and 10.2% in the United States are uninsured.

Uninsured Population by Age, Allentown and Sacred Heart

- Under 18 years old: 3.4%
- 18-64 years old: 9.6%
- 65+ years old: 0.4%

Figure 8

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[4] https://www.bsr.org/en/our-insights/blog-view/respecting-the-rights-of-vulnerable-groups
[5] https://covid.cdc.gov/covid-data-tracker/
[6] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4194634/

In the Allentown, Sacred Heart, and Star Community Health service area, only 0.4% of the 65 and older population are uninsured, 9.6% of ages 18 to 64 are uninsured, and 3.4% of children under 18 years old are uninsured. According to CHNA survey results, 3.4% of all surveyed respondents in the network either have no coverage and pay cash or do not know if they have insurance. The discrepancy between service area statistics and CHNA survey respondents is important to note as we continue to increase our outreach efforts in the communities we serve to reach our most vulnerable populations, which includes the uninsured population.

ALICE

Asset Limited, Income Constrained, Employed (ALICE) are households that earn more than the Federal Poverty Level, but less than the basic cost of living.[7] Because ALICE households do not qualify for Federal assistance, they cannot always pay bills and have little money left over to put towards savings. ALICE households are often forced to make difficult decisions like choosing between paying rent or quality childcare. Problems that ALICE families face are often intertwined and affect each other, all of which can pose risks to health, safety, and financial stability.[8] These areas often include housing, childcare, education, food, transportation, health care, technology, and taxes. The most recent ALICE report (2018) found that 35% of households in Lehigh county were considered ALICE[9], much higher than the Pennsylvania state average of 27%. In Lehigh county, 20,523 single or cohabitating households were ALICE, 8,584 families with children were ALICE, and 19,925 people 65 years and older were ALICE. This is partially due to the increase in living costs while wages have stayed stagnant. In 2018, the average cost of living for a single adult in Lehigh county was $2,305 a month and $27,660 a year, while the average hourly wage was $13.83.[10] Out of the cities, boroughs, and townships in Lehigh county, Fountain Hill borough has the highest amount of ALICE households (50%) and Allentown city has the second highest (43%).

"I still think there's a silent minority of people that were in the middle, that don't want to admit that they need some of the help that they really do need... so they're kind of the silent majority of Okay, well, maybe I'll stop down at that food bank and get something."

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[7] https://www.unitedforalice.org/
[8] https://www.unitedforalice.org/consequences
[9] https://www.unitedforalice.org/pennsylvania
[10] https://www.unitedforalice.org/county-profiles/pennsylvania

Children and Adolescents

According to 2019 5 Year ACS estimates, 22.7% of the Allentown, Sacred Heart, and Star Community Health service area is below 18 years old. Childhood is a crucial time for development in all aspects of life, thus it is important to study health behaviors and target initiatives towards addressing negative health patterns in youth. The 2019 Pennsylvania Youth Survey (PAYS)[11] is run by the Pennsylvania Commission on Crime and Deliquency and asks questions pertaining to drug use, violence, mental health, school safety, and more. PAYS is administered (by paper or online) bieninially in odd years to students in grades 6, 8, 10, and 12. According to PAYS, 38.3% of children in Lehigh county report lifetime usage of alcohol and 16.8% report lifetime usage of marijuana.[12] PAYS defines lifetime use as "a measure of the percentage of students who tried the particular substance at least once in their lifetime."[13] The data in this section is reported from PAYS unless stated otherwise.

Tobacco, Nicotine and Vaping

In Lehigh county, 6.7% of students reported a lifetime usage of cigarettes, a decrease of almost 3% since 2017. Of students in Lehigh county, 16.9% reported vaping in the past 30 days, a decrease of more than 1% since 2017. However, it is important to note that electronic vaping use in the past year has significantly increased for nicotine and marijuana/hash oil electronic vaping products, with 40.3% of Lehigh county students reported vaping nicotine in the past year; up almost 20% from 2017. The largest increase (3.67 times) was seen among 8th grade students and 26.7% of Lehigh county students surveyed reported vaping marijuana or hash oil in the past year; up more than 15% since 2017.

Other Substance Use

Substance use in children and adolescents can have a significant impact on their health and well-being.[14] Substance use can affect growth and development, especially brain development, lead to risky behaviors such as unprotected sex and dangerous driving, as well as contribute to health problems in adulthood (e.g., heart disease, sleep disorders).[15] In 2019, PAYS found that lifetime use of substances

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[11] https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS)-2019.aspx
[12] https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS).aspx
[13] https://www.pccd.pa.gov/Juvenile-Justice/PAYS/Bucks%20County%20Profile%20Report%202019.pdf
[14] https://www.cdc.gov/ncbddd/fasd/features/teen-substance-use.html
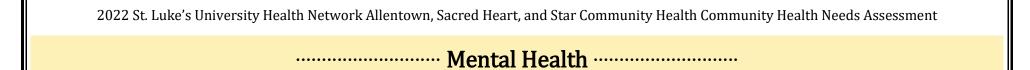[15] https://www.cdc.gov/ncbddd/fasd/features/teen-substance-use.html

among youth across the state was 41% alcohol use, 17.3% marijuana use, 4.1% prescription pain medication, and 3.9% over-the-counter drugs. In Lehigh county, lifetime prescription use was 4% and 3.8% for over-the-counter. Students often view these drugs as safer than illicit drugs because they are prescribed by a doctor or available legally for adults. Small portions of the state used cocaine, methamphetamines, heroin, ecstasy, and synthetic drugs. However, the most frequent "other drugs" used were hallucinogens (2.7% lifetime use). Lehigh county students had a 1.8% lifetime use of hallucinogens.

Regarding risky behavior while under the influence of drugs and other substances, 7.4% of students in Pennsylvania engaged in binge drinking in the past two weeks and 1.5% of students reported driving while or shortly after drinking. Additionally, 3% of students indicated driving after using marijuana in the past year. In Lehigh county, 6.3% of students engaged in binge drinking in the past 2 weeks, 1% of students reported driving while or shortly after drinking, and 2.4% report driving after using marijuana in the past year. Finally, 34.3% of students in the state and in Lehigh county reported *taking without permission* as their most frequent source/method of obtaining alcohol. The next highest source was *parents provided it for me*, which was 25.7% of students in the state and 29.6% of students in Lehigh county. For obtaining prescription drugs, the most common method was *taking them from a family member living in my home*, a method used by 41.4% of students in the state and 43.4% of students in Lehigh county. For willingness to use, 24.5% of students across the state and 21.6% of students in Lehigh county indicated a willingness to use alcohol if presented with the chance.

Violence and Bullying

It is important for all children to feel safe at school in order to learn, socialize, and develop. However, PAYS has found that violence on school property is a concern, with 15.9% of students in Lehigh county report being threatened with violence on school property in the past year. This falls below the state average (18.9%) and has decreased 6% since 2015. Additionally, 7% of Lehigh county students reported having been attacked on school property, a 2.7% decrease since 2015. However, 1.7% of students have been attacked with a weapon, which has increase by 0.4% since 2017. Finally, 1.7% of Lehigh county students report bringing a weapon to school in the past 30 days, which is much higher than that state average (0.9%) and an increase since 2017.

Bullying is also a factor contributing to violence in schools, prompting some students to skip school and potentially lowering self-esteem. In Lehigh county, 20.3% of students reported experiencing bullying in the past 12 months. This is lower than the state average (25.1%) and a decrease of approximately 5% since 2017. The most common way students reported being abused was emotional abuse, insults, and name calling (57.3%), followed by physical injury (22%), and threats (20.7%). Of the students who have been bullied in Lehigh county, 10.5% report being bullied via text or social media. Of the students in Lehigh county that indicated having been cyberbullied, 57.5% indicated feeling so sad or hopeless every day for the past 2 weeks they stopped doing usual activities. In the past year, 40.3% of those students seriously considered suicide, 33.8% made a suicide plan, and 30.6% attempted suicide.

Mental Health

Mental health is an important indicator for children and adolescents social and emotional development. Important mental health habits such as resilience and good judgment aid in overall well-being. When asked about depression, the most common depressed thought expressed by Lehigh county students was *at times I think I am no good at all* (36.6%), similar to response rate in Pennsylvania (36.3%). Additionally, 38% of children in Pennsylvania and 38.3% of students in Lehigh county report feeling sad or depressed most days in the past 12 months.

PAYS also asks questions pertaining to self-harm and suicide. In Pennsylvania, 14.4% of students indicated using self-harm (e.g., cutting, scraping, burning) in the past 12 months and 13.8% in Lehigh county indicated using self-harm. Additionally, 16.2% of students across the state indicated seriously considering suicide, 12.9% planned suicide, 9.7% attempted suicide, and 2% needed medical treatment as a result. In Lehigh county, 16.7% of students seriously considered suicide, 13.5% planned suicide, 10.7% attempted suicide, and 2.3% needed medical treatment as a result.

Risk and Protective Factors

Concerning trends related to perceived importance of school indicate that less than half of all students in Lehigh county feel that school is going to be important for their future. Only 35.7% of students in 2019 reported enjoying being in school during the past year, a 6.3% reduction from 2017. Only 76.6% of all Lehigh students report feeling safe at school which is below the state average (80%).

Many risk and protective factors come into play when understanding observed rates of drug use and mental health issues explored in the CHNA. A risk factor is something that poses potential harm to a student's life and a protective factor is something that can help keep the student safe. Among the social risk factors, Lehigh county students report low neighborhood attachment (50%), low commitment toward school (54%), and parental attitudes encouraging antisocial behavior (48%). Social protective factors included family attachment (57%), opportunities for prosocial involvement in their family (58%) versus only reporting opportunities in school (42%), and 61% have a belief in the moral order, or what is right and wrong.

Seniors

According to the ACS (2015-2019), there are an estimated 59,382 people 65 years and older living in the Allentown, Sacred Heart, and Star Community Health service area[16] and an estimated 60,102 people 65 years and older in Lehigh county. The 65 and older population grew 34.2% in the last ten years and by 3.2% from 2018 to 2019.[17] By 2034, it is expected that the 65 and older population will outnumber children.[18] By 2060, adults 65 and older will account for 23.4% of the population, approximately 94.7 million people.

✦ *Figure 9*

Percent of Medicare Beneficiaries					
	St. Luke's Survey	Allentown and Sacred Heart Service Area	Lehigh County	Pennsylvania	United States
Diabetes	19.8%	26.2%	26.1%	25.8%	27.0%
Heart Attack and other Disease	12.8%	25.2%	24.7%	27.3%	26.8%
High Blood Pressure	56.1%	62.1%	61.6%	58.5%	57.2%
High Cholesterol	37.3%	56.9%	56.3%	52.7%	47.7%

In 2018, 20.5% of the Medicare beneficiaries in the Allentown and Sacred Heart service area and 20.7% in Lehigh county report suffering from depression. In the same time frame, 20.7% of Medicare beneficiaries in Lehigh county report suffering from depression.[19] Both of these are higher than Pennsylvania state average (19.3%) and the United States average (18.4%). Other important factors to observe in the senior population are the prevalence of diseases that begin to appear or worsen with age. Examples include diabetes, heart disease, high blood pressure, and high cholesterol. Figure 9 illustrates the percentage of Medicare beneficiaries in the Allentown, Sacred Heart, and Star Community Health service area that report having these diseases.[20] In comparison to Lehigh county, the numbers are generally similar with slightly higher rates in the Allentown, Sacred Heart, and Star Community Health service area. High blood pressure and high cholesterol both increase the chances for cardiovascular disease, and the averages in the Allentown and Sacred Heart service area are significantly higher than national averages. The CHNA survey results in the Allentown, Sacred Heart, and Star Community Health service area indicate that survey respondents 65 years and older have much lower rates of diabetes, heart disease, high blood pressure, and high cholesterol than previously reported. While the numbers from the surveyed population are lower, it is still an area of focus the ensure health aging for the senior population.

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[16] https://www.census.gov/programs-surveys/acs/
[17] https://www.census.gov/newsroom/press-releases/2020/65-older-population-grows.html
[18] https://www.census.gov/library/visualizations/2018/comm/historic-first.html
[19] https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Geographic-Variation/GV_PUF
[20] https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Geographic-Variation/GV_PUF
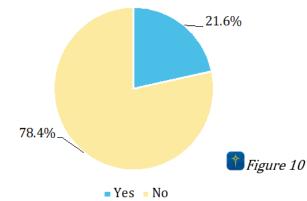
Food insecurity is another important factor related to senior health. Feeding America released a 2020 food insecurity report on seniors in America and found that 7.3% of seniors are food insecure.[21] The report found that of the food insecure senior population, the highest insecure rates were found in racial and ethnic minorities, those with lower incomes, younger seniors (ages 60-69), and renters.

Each year, America's Health Rankings produces senior health reports for each state in the nation. The organization ranks each state on six categories: overall, behaviors, social and economic, physical environment, clinical care, and health outcomes on a scale of 1-50 with 1 as the best score. Clinical care assesses factors including access to care, quality of services provided, and preventive services. Physical environment assesses factors including air and water quality, pollution, and housing conditions. Pennsylvania's best ranking appeared in clinical care (19) and worst in physical environment (46).[22]

Senior mental health is a growing concern in the United States, especially with isolation during the COVID-19 pandemic. According to America's Health Rankings, 8.3% of senior adults in Pennsylvania seniors experience frequent mental health distress compared to the national average of 7.9%.[23] Frequent mental distress is defined as 14 or more poor mental health days a month and is associated with physical inactivity, insufficient sleep, obesity, smoking, and alcohol consumption. Other factors that can contribute to frequent mental distress are the inability to afford healthcare, living alone, and activity limitations due to chronic conditions, physical disabilities, or mental health problems. One reason that the senior population may not receive adequate mental care is due to the fact that symptoms of some mental health issues like depression or lapses in memory often get dismissed as typical aspects of aging.[24] Other health conditions related to aging also impact mental health in seniors; older adults with diabetes have a higher risk of developing depression or cognitive impairment while adults with coronary heart disease or had a stroke are more likely to have frequent mental distress.[25,26]

Falls are the leading cause of fatal and nonfatal injuries in older Americans.[27] The 2020 senior health report found that 24.2% of older adults in Pennsylvania had fallen within the last 12 months.[28] One in five falls among older adults causes serious injury, including hip fractures and head injuries.[29]

Ever Fallen, Allentown and Sacred Heart

21.6%

78.4%

Figure 10

■ Yes ■ No

[21] https://www.feedingamerica.org/research/senior-hunger-research/senior
[22] https://www.americashealthrankings.org/explore/senior/measure/overall_sr_3/state/PA
[23] https://www.americashealthrankings.org/explore/senior/measure/overall_sr_3/state/PA
[24] https://www.agingcare.com/articles/understanding-mental-health-issues-in-seniors-209387.htm
[25] https://www.cdc.gov/aging/publications/coronary-heart-disease-brief.html
[26] https://www.nia.nih.gov/health/diabetes-older-people
[27] https://www.ncoa.org/healthy-aging/falls-prevention/preventing-falls-tips-for-older-adults-and-caregivers/
[28] https://www.americashealthrankings.org/explore/senior/measure/falls_sr/state/PA
[29] https://www.americashealthrankings.org/explore/senior/measure/falls_sr/state/NJ

Common factors that can lead to falls are balance and gait, vision, medications, environment, and chronic conditions.[30] However, the number of falls can be reduced through practical lifestyle adjustments, educational programs, and community partnerships.[31] Of the Allentown, Sacred Heart, and Star Community Health CHNA survey respondents 45 years and older, 21.6% have ever fallen. Of those 21.6% that have fallen, 18% have fallen 1-2 times, 2% 3-4 times, and 2% 5 or more times.

Along with other health concerns that increase with aging, polypharmacy is one of the hardest to track. Polypharmacy lacks a central definition, but authors Dagli and Sharma define polypharmacy as the use of multiple medications generally referred to as five or more prescribed drugs per day.[32] This is common among the senior population because of the need to treat various diseases and injuries that increase with age. Symptoms of polypharmacy include tiredness, decreased alertness, incontinence, lack of appetite, falls, depression, tremors, hallucinations, and more.[33] In 2020 it was estimated that 44% of men and 57% of women 65 and older take five or more prescription and/or nonprescription drugs a week.[34] Polypharmacy has severe negative impacts on patient care and increases the risk for adverse drug reactions.[35]

By increasing protective factors in the community, the effects of aging can be mitigated, and the senior population can thrive. A protective factor is a condition or characteristic that helps people deal more effectively with stressful events and lessens risk of vulnerability.[36] Engaging in physical activities or hobbies and eating well can have a positive impact on senior well-being. Regular exercise can reduce the risk of some diseases, lower blood pressure, and help cognitive function.[37] Self-efficacy, the belief in one's ability to achieve goals and influence life events, is also a potential protective factor. Research indicates that self-efficacy in older adults was related to increased energy, better sleep, decreased pain or discomfort, and increased overall satisfaction with life.[38] Engaging seniors in meaningful relationships and coordinating resources in the community can help their overall well-being and protect against some negative effects from aging. For the senior population, Healthy People 2030 seeks to reduce the rate of hospital admissions for diabetes among older adults, reduce fall related deaths, and to reduce the proportion of older adults who use inappropriate medicines.[39]

[30] https://www.ncoa.org/healthy-aging/falls-prevention/preventing-falls-tips-for-older-adults-and-caregivers/6-steps-to-protect-your-older-loved-one-from-a-fall/
[31] https://www.ncoa.org/healthy-aging/falls-prevention/
[32] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4295469/
[33] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4295469/
[34] https://www.uspharmacist.com/article/polypharmacy-and-drug-adherence-in-elderly-patients
[35] https://www.npjournal.org/article/S1555-4155(19)31051-7/fulltext
[36] https://www.respectaging.ca/training/Participant_Manual_-_Module_08.pdf
[37] https://www.ncbi.nlm.nih.gov/books/NBK316205/
[38] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4437657/
[39] https://health.gov/healthypeople/objectives-and-data/browse-objectives/older-adults

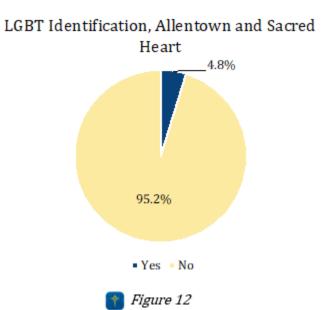# ········· Lesbian, Gay, Bisexual, Transgender (LGBT) ·········

In 2020, the Bradbury-Sullivan LGBT Community Center in Allentown, Pennsylvania, with funding from the PA Department of Health, conducted a Pennsylvania statewide LGBT Needs Assessment (N= 6,582). Results show that 23.6% of Bradbury-Sullivan respondents have not visited the doctor for a routine check-up in a year or longer and 36% have not visited the dentist in the past year. Additionally, 1 in 3 Bradbury-Sullivan respondents fear seeking healthcare services because of past or potential negative reactions from healthcare providers.
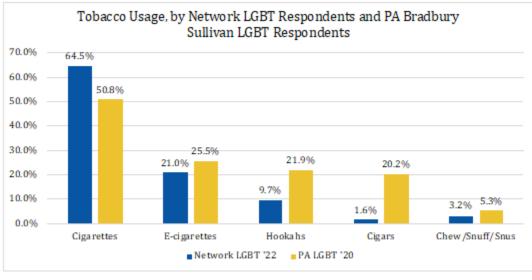
Within the Pennsylvania LGBT Health Needs Assessment, there were 257 respondents from Lehigh County, 25.7% identifying as transgender or nonbinary. The mean age of respondents was approximately 39 years, but ranged from 13 years to 76 years old, providing a thorough analysis of the experiences of persons who identify as LGBT across the lifespan. In Lehigh county, 22.7% of respondents reported feeling dissatisfied with their life and 52.3% of overall respondents reported ever considering suicide in their life.

From the St. Luke's CHNA survey, we found that 4.8% of respondents from the Allentown, Sacred Heart, and Star Community Health service area identify as LGBT. Additionally, 0.28% of all respondents in the network identify as non-binary, 0.08% identify as genderqueer, 0.06% identify as gender fluid, and 0.1% identify as another gender. When comparing Bradbury Sullivan LGBT respondents to CHNA LGBT respondents, rates of cigarette use and e-cigarette use fares similar; cigarettes are the most used tobacco product by respondents in both surveys. However, hookah use (21.9%) and cigar use (20.2%) is much higher in Bradbury Sullivan respondents than CHNA respondents, 9.7% and 1.6%, respectively (Figure 13).

Figure 11

22

Category	Outcome Measures	Lehigh County PA LGBT Respondents
Mental Health	Ever Considered Suicide	52.3%
	Dissatisfied with Life	22.7%
Mental Health Access	Had a Mental Health Challenge in the last 12 months	66.4%
	Seen by a Mental Health Provider in the las 12 months	48.0%
Healthcare Barriers	Uninsured	4.9%
	no Primary Care Provider	16.9%
Discrimination and Violence	Experienced Discrimination	55.0%
	Experienced Violence	19.5%
Financial, Food and Housing Insecurity	Financially Insecure	43.1%
	Food Insecure	27.1%
	Ever Homeless	16.7%
Chronic Disease	Diabetes Diagnosis	6.7%
	Pre-Diabetes Diagnosis	5.8%
	HIV Diagnosis	3.7%
Tobacco and Drug Use	Current Cigarette Smoker (18+ years)	10.4%
	Curren E-Cigarette Smokers (all ages)	6.9%
	Ever Engaged in Chemsex	23.7%

LGBT Identification, Allentown and Sacred Heart

Figure 12

Tobacco Usage, by Network LGBT Respondents and PA Bradbury Sullivan LGBT Respondents

Figure 13

Disabled Population

In the Allentown, Sacred Heart, and Star Community Health service area, 13.9% of people have a disability.[40] The six disability types considered in this category are: hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty (serious difficulty walking or climbing stairs), self-care difficulty, and independent living difficulty.[41] Of those who have a disability in the Allentown, Sacred Heart, and Star Community Health service area, 11.7% are under 18 years old, 52.0% are between 18 and 64 years, and 36.3% are 65 years and older.

Veteran Population

Of the Allentown, Sacred Heart, and Star Community Health population 18 years and older, 6.4% are veterans. The Census Bureau classifies a veteran as "a person 18 years old or over who has served (even for a short time), but is not now serving, on active duty in the U.S. Army,

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[40] data.census.gov/ Table (S1810)
[41] https://www.census.gov/topics/health/disability/guidance/data-collection-acs.html

Navy, Air Force, Marine Corps, or the Coast Guard, or who served in the U.S. Merchant Marine during World War II."[42] Of the 6.4% of veterans in the Allentown, Sacred Heart, and Star Community Health service area, 94.2% are male and 5.8% are female.[43]

Social and Economic Environment

Employment

      Unemployment and underemployment have serious impacts on an individual's health. Income is a social determinant of health, and in addition to affecting one's income, unemployment and underemployment can leave individuals without health insurance, paid sick leave, and parental leave—exacerbating negative health outcomes when people are at their most vulnerable. The unemployment rate is 4.4% in Pennsylvania according to the Robert Wood Johnson Foundation 2021 data.[44] However, unemployment rates varied widely within the year due to the COVID-19 pandemic. In January of 2020, Pennsylvania had an unemployment rate of 4.7%, but the rate sky-rocketed to 16.1% by April of 2020—the highest observed since the U.S. Great Depression. Pennsylvania reached unemployment rates below 10% by September of 2020 and 4.5% of residents of Lehigh county experienced unemployment.

Most CHNA survey respondents from the Allentown, Sacred Heart, and Star Community Health service area indicated their employment status as employed (51.1%) or retired (33.9%), while 4.3% are homemakers or students. Regarding unemployment, 10.7% are unemployed, which includes both individuals who are out of work and those that are unable to work.
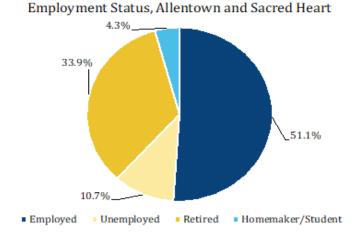

Employment Status, Allentown and Sacred Heart

4.3%
33.9%
51.1%
10.7%

■ Employed   ■ Unemployed   ■ Retired   ■ Homemaker/Student

Figure 14

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[42] https://www.census.gov/content/dam/Census/topics/population/veterans/guidance/acs-topic-information-veterans.pdf
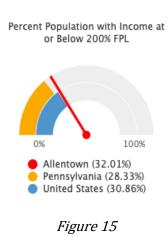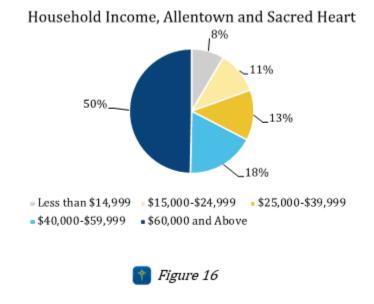[43] Data.census.gov/ Table (S2101)
[44] https://www.countyhealthrankings.org/

Household Income and Poverty

The 2021 Federal Poverty Level (FPL) poverty guideline is measured at $12,880 a year for one person and $26,500 for a family of four.[45] If one person is 200% of the Federal Poverty Level, they make $25,760; if a family of four is 200% of the Federal Poverty Level, they make $53,000. ACS data (2019) reports that 32% of the Allentown, Sacred Heart, and Star Community Health service area live 200% below the federal poverty level, slightly higher than Pennsylvania (28.3%) and the United States (30.9%). Zip codes 18101 and 18102 are the highest areas affected by poverty. The median household income in Lehigh county is $63,897, which is slightly higher than the median household income in Pennsylvania ($61,744) and the United States ($62,843).[46]

Almost half of respondents surveyed in the Allentown, Sacred Heart, and Star Community Health service area have a household income of $60,000 and above (49%). Twenty percent of respondents make $24,999 and below while 24% make between $25,000 and $59,999. While we cannot determine how many people live below the FPL based on household size, these survey results do reveal that there are many people who could use support from food pantries, Federally Qualified Health Centers, government assistance, rent assistance, and other social services to supplement their income.

Percent Population with Income at or Below 200% FPL

- Allentown (32.01%)
- Pennsylvania (28.33%)
- United States (30.86%)

Figure 15

Household Income, Allentown and Sacred Heart

- Less than $14,999
- $15,000-$24,999
- $25,000-$39,999
- $40,000-$59,999
- $60,000 and Above

Figure 16

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[45] https://aspe.hhs.gov/2021-poverty-guidelines
[46] Data.census.gov/

Education

While income and employment are linked to health status, educational attainment is linked to income and employment. These lay the building blocks for the next generation to have improved socioeconomic status and correlated positive health outcomes. The Healthy People 2030 high school target graduation rate is 90.7%.[47] In Pennsylvania, 91% of people have a high school diploma or equivalent and 89% of people in Lehigh county have a high school diploma or equivalent. The county underperforms by 5 percentage points when compared to U.S. top performers.[48]

In the Allentown, Sacred Heart, and Star Community Health service area, 95.7% of survey respondents have a high school degree or higher (1.6% have less than a high school education and 2.7% have some high school education). Respondents with only a high school diploma (22.8%) is slightly lower than those with some college or an associate's degree (30.6%). Broken down further, 19.2% have some college and 11.4% have an associate's degree, 20.6% have a bachelor's degree, and 21.7% have a graduate degree. CHNA survey results indicate that respondents are more likely to have a higher education degree than the general public (Figure 17). Additionally, CHNA survey data shows a lower percentage of respondents with less than a high school diploma compared to the general public.

It should be noted that people with higher levels of education are more likely to live healthier and longer lives than those with lower education levels.[49] Healthy People 2030 states that children with less access to quality education are less likely to get safe, high-paying jobs and will be more likely to have health problems (e.g., heart disease, diabetes). This is a significant concern because it is crucial to identify and work with populations with lower access to education and healthcare in order to aid in healthy lifestyles and well-being.
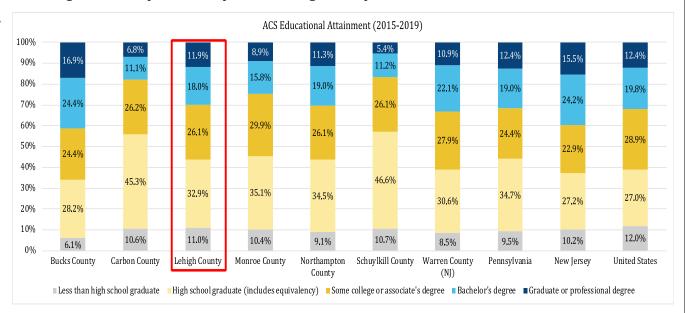

Figure 17

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[47] https://health.gov/healthypeople/objectives-and-data/
[48] https://www.countyhealthrankings.org
[49] https://health.gov/healthypeople/objectives-and-data/browse-objectives/education-access-and-quality

Language

English is the language that is most widely spoken in the Lehigh Valley area and surrounding areas of Pennsylvania. However, many people in our service area may be identified as having limited English proficiency. Limited English proficiency is reported as the percentage of the population five years and older who speak a language other than English at home and speak English less than "very well." Respondents were not instructed on how to interpret the meaning of "very well."[50]

Speaking and understanding English is important in this service area because most health services are provided in English. Language can also be a barrier to educational attainment, higher income, employment, accessing healthcare, and good health outcomes. In the Allentown, Sacred Heart, and Star Community Health service area, 10.8% are considered to have limited English proficiency, compared to 4.3% in Pennsylvania and 8.4% in the United States (Figure 19).

Figure 19

Translators and interpreters are required in locations where either 5% of the community speaks a different language or over 1,000 members speak a different language.[51] A translator typically only translates the written word while interpreters translate orally.

Allentown and Sacred Heart Service Area Languages			
Top Zip Codes	Percentage and Number of Spanish Speakers in Zip Code	Percentage and Number of Spanish Speakers in Zip Code Who Speak English Less than "Very Well"	Next Frequent Language
18102	50.3% (22,783 people)	47.3% (10,782 people)	Arabic (3.0%- 1,350 people)
18103	27.9% (12,237 people)	48.5% (5,931 people)	Other Indo-European languages (1.6%- 693 people)
18104	9.2% (3,913 people)	35.1% (1,372 people)	Other Indo-European languages (2.6%- 1,522 people)
18052	12.2% (3,205 people)	46.0% (1,474 people)	Arabic (6.0%- 1,569 people)
18062	2.8% (687 people)	11.4% (78 people)	Other Indo-European languages (4.3%- 1,050 people)
18109	33.6% (5,500 people)	46.5% (2,560 people)	Arabic (6.9%- 1,127 people)
18049	4.4% (737 people)	37.0% (273 people)	Other Indo-European languages and Vietnamese both (0.6%- 109 people)
18067	3.4% (584 people)	53.4% (312 people)	German or other West Germanic languages (1.1%- 193 people)
18101	52.1% (2,261 people)	48.8% (1,103 people)	Arabic (2.4%- 106 people)
18080	2.1% (219 people)	21.0% (46 people)	German or other West Germanic languages (0.7%- 74 people)
18031	8.6% (858 people)	2.8% (24 people)	Other Asian and Pacific Island languages (4.6%- 455 people)
18032	5.6% (499 people)	31.5% (157 people)	Other Indo-European languages (0.4%- 34 people)
18037	5.2% (386 people)	42.2% (163 people)	Arabic (2.0%- 146 people)
18106	6.6%(451 people)	25.3% (114 people)	Other Indo-European languages (1.9%- 127 people)
18088	1.2% (103 people)	13.6% (14 people)	Other Indo-European languages (1.0%- 80 people)
18069	4.9% (372 people)	42.2% (157 people)	Chinese (incl. Mandarin, Cantonese) (1.7%- 126 people)
19526	1.4% (154 people)	28.6% (44 people)	German or other West Germanic languages (1.1%- 118 people)
18015	21.7% (6,857 people)	48.5% (3,329 people)	Chinese (incl. Mandarin, Cantonese) (1.9%- 609 people)
18078	4.0% (298 people)	74.8% (223 people)	Other Indo-European languages (1.7%- 128 people)

Figure 18

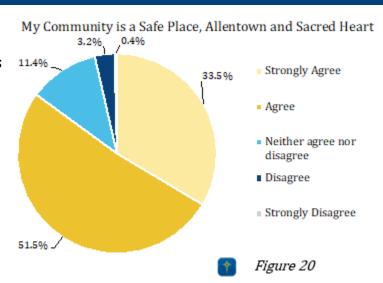[50] https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf

[51] https://www.hud.gov/program_offices/fair_housing_equal_opp/promotingfh/lep-faq#q3

Figure 18 shows the zip codes in the Allentown, Sacred Heart, and Star Community Health service areas. Columns shown in red text indicate areas that require translator or interpreter services. In zip codes 18102 and 18101, over half of the population speak Spanish. In total, 8 zip codes require services for Spanish speakers, 3 zip codes require services for Arabic speakers, and 2 zip codes require services for other Indo-European languages. Indo-European languages make up multiple languages, so more than one interpreter or translator would be needed.

Safety

Perceived safety is an important component of community integration. People who don't feel safe in their neighborhood are less likely to participate in outdoor activities and are more likely to isolate themselves, which can have negative impacts on both physical and mental health. Violent crime, defined as "offenses that involve face-to-face confrontation between a victim and a perpetrator, including homicide, rape, robbery, and aggravated assault"[52], in one example of community safety. Pennsylvania has a rate of 315 violent crime offenses per 100,000 population and the U.S. top performer rate is 63 per 100,000. Lehigh county has a violent crime rate of 231 per 100,000 population, with a declining trend in recent years.[53]

When asked to rate the degree to which they are agree that their community is a safe place to live, most CHNA survey respondents in the Allentown, Sacred Heart, and Star Community Health service area agreed (51.5%), 33.5% of respondents strongly agreed, and 11.4% neither agreed nor disagreed. Additionally, 3.2% disagreed that their community is a safe place to live and 0.4% strongly disagreed.

My Community is a Safe Place, Allentown and Sacred Heart

- Strongly Agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly Disagree

Figure 20

Social Associations

Related to safety, social association is a measure of the emotional and social support available to an individual. This indicator measures the number of membership associations per 10,000 population. The social association indicator in Lehigh county falls at 10.2, which falls below Pennsylvania (12.2) and U.S. top performers (18.2).[54]

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[52] https://www.countyhealthrankings.org/app/new-jersey/2021/measure/factors/43/data
[53] https://www.countyhealthrankings.org
[54] https://www.countyhealthrankings.org

Physical Environment

Food Insecurity

Food insecurity, according to the United States Department of Agriculture (USDA), is the lack of consistent access to a variety of foods for a quality diet.[55] A quality diet is one with access to a variety of foods that meet the individual's taste and nutritional needs. Very low food security (VLFS) is when normal eating patterns are disrupted and households lack money or other resources to obtain food. The USDA's annual report (2019) found that 10.5% of households nationwide are food insecure, 6.5% of which have low food security and 4.1% have VLFS.[56] Among households with children, 6.5% are food insecure and 0.6% have VLFS. The USDA report stated that households with children facing VLFS had to skip meals or not eat for entire days due to a lack of money for food.[57] In 2019, Pennsylvania had a food insecurity rate of 10.2% and VLFS rate of 4.1%.

Government assistance programs aim to help reduce food insecurity through national programs such as the Supplemental Nutrition Assistance Program (SNAP), the National School Lunch Program (NSLP), and Women, Infants and Children (WIC). In 2019, an estimated 49.7% of households receiving SNAP were food insecure, 36.9% of households receiving free or reduced school lunches were food insecure, and 34.1% of households receiving WIC were food insecure.[58] Additionally, 57.7% of households classified as VLFS reported participating in one of these three federal assistance programs, with SNAP having the largest number of participants (47.8%). According to ACS estimates (2015-2019), 15.5% of households in the Allentown, Sacred Heart, and Star Community Health service area received SNAP benefits.[59]
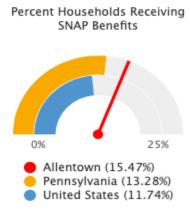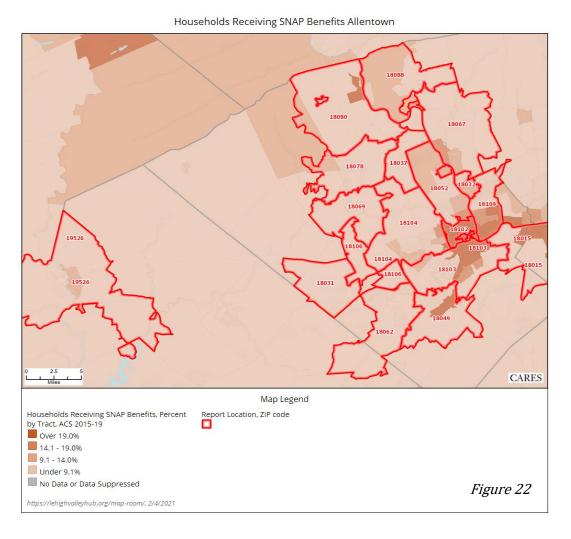

Percent Households Receiving SNAP Benefits

- Allentown (15.47%)
- Pennsylvania (13.28%)
- United States (11.74%)

Figure 21

[55] https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx
[56] https://www.ers.usda.gov/webdocs/publications/99282/err-275.pdf?v=4396.4
[57] https://www.ers.usda.gov/webdocs/publications/99282/err-275.pdf?v=4396.4
[58] https://www.ers.usda.gov/webdocs/publications/99282/err-275.pdf?v=4396.4
[59] data.census.gov/

Households Receiving SNAP Benefits Allentown

Figure 22

The COVID-19 pandemic required shutdowns across the county in 2020, resulting in many people losing jobs and their ability to afford food and other essential items to survive. Feeding America (2021) projected the potential rates of food insecurity because of COVID-19, estimating more than 50 million people experiencing food insecurity because of the pandemic.[60] Feeding America projects the annual food insecurity rate to increase to 12.9% in 2021, meaning that 1 in 8 people will be food insecure, along with 1 in 6 children. Additionally, the

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[60] https://www.feedingamerica.org/research/coronavirus-hunger-research

report projects the unemployment rate to be approximately 6.7% and the annual poverty rate to be 12% in 2021, which is a 0.9% increase from 2020.[61] The food insecurity rate in Lehigh county rose 34% from 2019-2020, reaching 13.5%. The projected food insecurity rate is 12% in Pennsylvania and 11.6% in Lehigh county. Additionally, 16.6% of children in Lehigh county in 2021 are projected to be food insecure. Lehigh county ranked 44 out of the 67 counties in Pennsylvania for food insecurity, with 1 ranked at the highest food insecurity rate.

Lehigh County Feeding America COVID-19 Food Insecurity Projections					
Rank 2021	2021	2020	2019	Change 2019-2020	2021 Child
44/67	11.6%	13.5%	10.0%	34.0%	16.6%

Figure 23

Additionally, availability of food can be a concern for children. PAYS asked students if they have been worried about running out of food one or more times in the past year, and 11.7% of students across Pennsylvania and 14.6% of students in Lehigh county agreed with this statement.[62]

It is also important to note that the pandemic affected people of color (BIPOC) communities hardest in terms of unemployment and food insecurity. The Latinx population had the highest unemployment rate among all racial and ethnic groups, spiking to 18.9% in April 2020. Additionally, Black individuals were already 2.4 times more likely to live in food insecure households than White individuals prior to the pandemic, and now 18 of the 25 counties across the country projected to have the highest food insecurity rates in 2020 are predominantly Black.[63]

Research studies have found that stress from inconsistent access to food can play an active role in fat accumulation and chronic disease.[64] In non-senior adults, food insecurity is associated with decreased nutrient intakes, increased rates of mental health problems, hypertension, and poor sleep outcomes.[65] In children, food insecurity is associated with increased risks of asthma, lower nutrient intakes, cognitive

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[61] https://www.feedingamerica.org/research/coronavirus-hunger-research
[62] https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS)-2019.aspx
[63] https://www.feedingamerica.org/research/coronavirus-hunger-research
[64] https://doi.org/10.3945/an.112.002543
[65] https://www.healthaffairs.org/doi/10.1377/hlthaff.2015.0645

problems, aggression, and anxiety. Food insecure children may also have higher risks of hospitalization, poor overall health, asthma, depression, and worsened oral health.[66]

Food deserts also play a role in food insecurity and chronic disease. A food desert is an area that has limited or nonexistent access to affordable and healthy grocery stores.[67] Living in a food desert has been linked to a poor diet and a greater risk for obesity, while people who live near a grocery store are more likely to consume fruits and vegetables and are less likely to be obese.[68] Typically in food deserts, there is a large amount of fast food and corner stores with inexpensive, high calorie food that lacks nutritional value. Long term consumption of unhealthy food can increase likelihood of obesity, type 2 diabetes, heart disease, and other diet related conditions.[69]

The Robert Wood Johnson Foundation also ranks counties based on their food environment index; the food environment index is measured by the "percentage of the population that is low income and does not live close to a grocery store."[70] Lehigh county scored 8.4 out of 10, with 10 as the best.[71]

In 2015, Buy Fresh Buy Local, a Greater Lehigh Valley organization with aims to increase food access and consumption of locally grown food, released a report on the status of the Lehigh Valley's local food economy. In this report, Buy Fresh Buy Local stated that one third of the average Lehigh Valley family grocery bill is spent on sweeteners, jams, candy, frozen prepared meals, snack foods, and condiments.[72] The organization suggests families should purchase locally grown, healthy foods that will promote a healthy lifestyle. The report noted that locally grown food creates about $17 million of economic activity in the Lehigh Valley each year and for every dollar received by food related farms in Lehigh and Northampton counties, an average of 45 cents of economic activity is added to the Lehigh Valley.[73] Additionally, the percentage of SNAP benefits spent at local farmer's markets was extremely low. Increasing accessibility and educating communities about SNAP use at farmer's markets will help farmers and food insecure families to purchase healthy fruits and vegetables. Shopping locally for fresh fruits and vegetables not only helps the economy in the Lehigh Valley, but also helps reduce the risk of chronic disease.

"We have a food crisis in this community. The demand for food in pantries and kitchens is tremendous and ongoing. The crisis is likely to be with us."

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[66] https://www.healthaffairs.org/doi/10.1377/hlthaff.2015.0645
[67] https://foodispower.org/access-health/food-deserts/
[68] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5708005/
[69] https://foodispower.org/access-health/food-deserts/
[70] https://www.countyhealthrankings.org/app/pennsylvania/2020/measure/factors/133/description
[71] https://www.countyhealthrankings.org/app/pennsylvania/2021/rankings/lehigh/county/outcomes/overall/snapshot
[72] http://www.buylocalglv.org/wp-content/uploads/2016/01/Assessment-Report-LV-Food-Economy-FINAL-1.pdf
[73] http://www.buylocalglv.org/wp-content/uploads/2016/01/Assessment-Report-LV-Food-Economy-FINAL-1.pdf

Housing and Blight

Stable and safe housing is an important factor that sets the foundation to achieve quality education, valuable social interactions, and access nutritious foods. According to Healthy People 2030, safe housing is considered a social determinant of health, which are "conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks."[74] Housing affects other sectors including education, health, racial equity, economic stability, homelessness, crime, the environment, and disability rights.[75] Over time, homeownership can help build wealth and savings, which are important in relation to health; but not everyone has equal opportunity to homeownership. Decades of discriminatory practices has led to disproportionate homeownership rate between races.[76] Healthy People 2030 has made housing a focus and some of their objectives are to reduce the proportion of families that spend 30% or more of income on housing, increase the proportion of homeless adults who get mental health services, and to increase the proportion of homes that have an entrance without steps to make it accessible for people with disabilities.[77]

In a 2020 housing report, the Lehigh Valley Planning Commission (LVPC) assessed the state of housing situations across the Lehigh Valley, which includes Allentown, Bethlehem, and Easton (Lehigh and Northampton counties). Using ACS data (2018), LVPC found that 38% of residents in the Lehigh Valley are cost-burdened (Figure 25).[78] Further analysis with the Federal Reserve of Philadelphia identified 78,000 Lehigh Valley residents who work in jobs that require close physical contact, which puts them at greater risk for COVID- 19.[79] Lehigh Valley residents who are considered cost-burdened owners, cost-burdened renters, or at-risk workers have the highest risk for experiencing displacement and or housing loss because of the COVID-19 pandemic.[80]

The COVID-19 pandemic has resulted in thousands of people losing jobs, leaving them vulnerable to evictions or foreclosures. The CDC issued a moratorium on September 4, 2020 temporarily halting evictions. The moratorium was set to end December 31, 2020 but was pushed back until January 31, 2021 and extended further to March 31, 2021 as the virus persisted.[81] The moratorium was meant to keep

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[74] https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health
[75] https://www.opportunityhome.org/related-sectors/
[76] https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report
[77] https://health.gov/healthypeople/objectives-and-data/browse-objectives/housing-and-homes
[78] https://lvpc.org/data-lv-housing.html
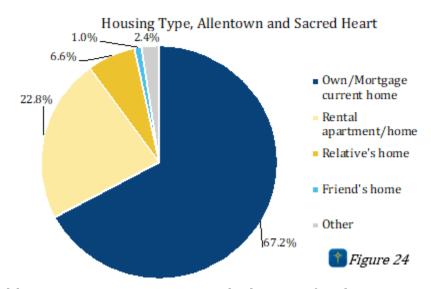[79] https://lvpc.org/data-lv-housing.html
[80] https://lvpc.org/data-lv-housing.html
[81] https://www.cdc.gov/coronavirus/2019-ncov/more/pdf/CDC-Eviction-Moratorium-01292021.pdf

people in their current housing situations regardless of ability to pay rent, however it did not exclude tenants from paying rent. While this was a temporary solution, people facing eviction are likely to experience high risks of depression, anxiety and psychological distress.[82]

To get an understanding of how the Allentown, Sacred Heart, and Star Community Health service area population lives, we asked respondents to indicate their housing type. Due to small sample size, "Other" consists of individuals living in a shelter (.1%), group home (0.24%), senior living (0.48%), homeless (0.43%), or Other (1.2%). The largest percentage of respondents own or have a mortgage on their home (67.2%), followed by renting their home (22.8%), living at a relative's home (6.6%), Other (2.4%), and living at a friend's home (1%).

Figure 24

One indicator used to assess housing status is the percentage of households that are cost-burdened. According to the department of Housing and Urban Development (HUD), a household is considered cost-burdened if 30% or more of the income goes toward their mortgage or rent.[83] A household is severely cost-burdened if 50% or more of their income goes toward paying mortgage or rent. Both situations can be detrimental to an individual's overall well-being because there is less disposable income to pay for food, healthcare costs, transportation, and other out of pocket expenses. A 2019 report by the County Health Rankings and Robert Wood Johnson (RWJ) Foundation found that 1 in 10 households across the United States spend more than half of their income on housing costs (severe cost-burdened).[84] The report also found that severe cost-burdened households are more likely to be affected by food insecurity, child poverty, and fair or poor health.[85] Additionally, segregated counties across the United States have higher cost-burdened rates for both Black and White households. However, nearly 1 in 4 Black households spend more than half of their income on housing.[86]

Cost-burdened housing is a significant problem in the St. Luke's service area as wages and housing costs are not always aligned. Further assessing wage disparities, the National Low Income Housing Coalition (NLIHC) released a report on fiscal year 2020's housing costs and

[82] https://doi.org/10.1016/j.socscimed.2017.01.010
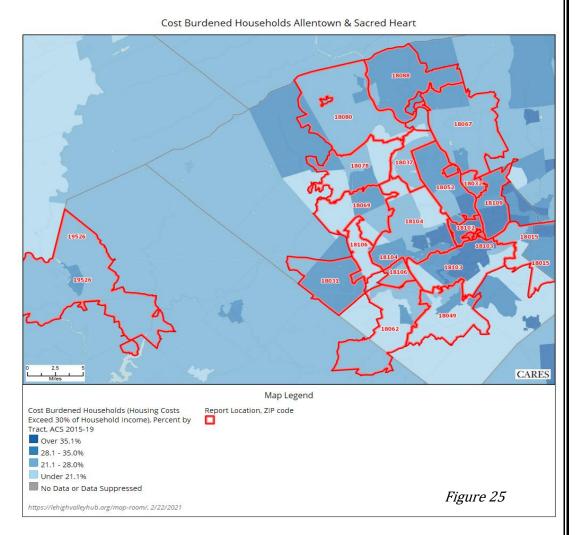[83] https://www.huduser.gov/portal/pdredge/pdr_edge_featd_article_092214.html
[84] https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report
[85] https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report
[86] https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report

wages. Out of all states, Pennsylvania ranks 26 with the highest housing costs.[87] In Pennsylvania, the fair market rent for a two-bedroom apartment is $1,000, meaning that for a household to not be cost-burdened, they must earn $3,333 a month or $39,992 annually.[88] This translates into an hourly wage of $19.23, however Pennsylvania's state minimum wage is only $7.25 an hour. Someone living on the state minimum wage would need to work 106 hours a week to afford rent each month. The Lehigh Valley (Allentown, Bethlehem, Easton) is the fourth most expensive area in Pennsylvania, requiring $19.73 an hour to afford an apartment and not be cost-burdened. In Lehigh county, the fair market value for a two-bedroom apartment in $1,026, requiring $19.73 an hour or $41,040 annually to afford an apartment and not be cost-burdened. Based on the 2020 estimated hourly mean wage for a renter in Lehigh county, $16 an hour, an individual would need to work 1.2 full time jobs to afford an apartment.[89]

Figure 25

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[87] https://reports.nlihc.org/oor
[88] https://reports.nlihc.org/sites/default/files/oor/files/reports/state/PA-2020-OOR.pdf
[89] https://reports.nlihc.org/sites/default/files/oor/files/reports/state/PA-2020-OOR.pdf

"Many people are working more than one job and many of the jobs that people are in don't actually pay a living wage meaning that's it's enough to support their housing costs, their food costs, transportation costs and then have any discretionary income left over for whatever else might be needed. So, you have people who are working multiple jobs and people who still need to visit food banks."

The 10 lowest income census tracts from Lehigh county have an average of 50.5% of households meeting criteria for cost-burdened households (Figure 24). This percentage is significantly higher than both the Pennsylvania, 28.9%, and the national averages, 31.8%. Census tracts 9 and 18 have almost 60% of households paying 30% or more of their income towards mortgage or rent. Figure 26 illustrates the cost-burdened households in the Allentown, Sacred Heart, and Star Community Health service area. Two other important metrics to look at are the percentage of households that lack complete kitchens and the percentage of households that lack complete plumbing. It is important to assess the conditions inside of houses because they give an indication of living standards and assess the quality of household facilities.[90]

Allentown and Sacred Heart (Lehigh)		
Geographic Area Name (Zip Code)	Median Household Income (lowest first)	% Cost Burdened
Census Tract 19, Lehigh County, PA (18052, 18102, & 18104)	$ 25,201	41.6%
Census Tract 97, Lehigh County, PA (18101, 18102, & 18105)	$ 26,327	45.5%
Census Tract 16, Lehigh County, PA (18102)	$ 26,807	54.5%
Census Tract 10, Lehigh County, PA (18101 & 18102)	$ 27,059	51.3%
Census Tract 12, Lehigh County, PA (18101 & 18102)	$ 29,583	46.3%
Census Tract 18, Lehigh County, PA (18101 & 18102)	$ 29,846	59.9%
Census Tract 9, Lehigh County, PA (18102)	$ 32,096	59.7%
Census Tract 7, Lehigh County, PA (18052 & 18102)	$ 32,760	50.2%
Census Tract 96, Lehigh County, PA (18109)	$ 34,217	46.4%
Census Tract 5, Lehigh County, PA (18101 & 18102)	$ 34,528	49.7%
Average of 10 Census Tracts	$ 29,842	50.5%
Pennsylvania	$ 61,744	28.9%
National	$ 62,843	31.8%

Figure 26: Data is reported from the 5- year ACS (2015-2019) estimates by the U.S. Census Bureau

The information can also be used to determine areas eligible for funding. According to the 2019 ACS subject definitions guide, a complete kitchen must include a sink with a faucet, a stove or range, and a refrigerator.[91] If a household lacks any one or more of these facilities, the household is considered to lack a complete kitchen. A complete plumbing facility must include hot and cold running water, and a bathtub or shower.[92] If a household lacks one or both of these facilities, the house is considered to lack complete plumbing. Without a complete kitchen, families are unable to cook nutritious meals and may rely more heavily on fast food or other ready-made food. For households lacking complete plumbing facilities, families may not be able to bathe regularly leading to worsened hygiene.

[90] https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf
[91] https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf
[92] https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf

Allentown and Sacred Heart (Lehigh)		
Geographic Area Name (Zip Code)	Median Household Income (lowest first)	% Lacking complete kitchen
Census Tract 19, Lehigh County, PA (18052, 18102, & 18104)	$ 25,201	0.5%
Census Tract 97, Lehigh County, PA (18101, 18102, & 18105)	$ 26,327	7.8%
Census Tract 16, Lehigh County, PA (18102)	$ 26,807	1.4%
Census Tract 10, Lehigh County, PA (18101 & 18102)	$ 27,059	2.1%
Census Tract 12, Lehigh County, PA (18101 & 18102)	$ 29,583	2.7%
Census Tract 18, Lehigh County, PA (18101 & 18102)	$ 29,846	1.4%
Census Tract 9, Lehigh County, PA (18102)	$ 32,096	7.0%
Census Tract 7, Lehigh County, PA (18052 & 18102)	$ 32,760	2.4%
Census Tract 96, Lehigh County, PA (18109)	$ 34,217	0.3%
Census Tract 5, Lehigh County, PA (18101 & 18102)	$ 34,528	3.4%
Average of 10 Census Tracts	$ 29,842	2.9%
Pennsylvania	$ 61,744	3.4%
National	$ 62,843	2.8%

Figure 27: Data is reported from the 5- year ACS (2015-2019) estimates by the U.S. Census Bureau

The 10 lowest income census tracts have an average of 2.9% of households lack a complete kitchen. This is slightly higher than the national average and lower than the Pennsylvania state average. Additionally, tracts 97 and 9 have the highest percent of households lacking a complete kitchen, 7.8% and 7.0%, respectively.

The average percent of households lacking complete plumbing shows a low percentage (0.9%) compared to the averages of Pennsylvania (2.6%) and the nation (2.1%). Census tracts 5 and 9 appear to have the highest percent of households lacking complete plumbing, 2.0% and 4.4%, respectively.

Allentown and Sacred Heart (Lehigh)		
Geographic Area Name (Zip Code)	Median Household Income (lowest first)	% Lacking complete plumbing
Census Tract 19, Lehigh County, PA (18052, 18102, & 18104)	$ 25,201	0.0%
Census Tract 97, Lehigh County, PA (18101, 18102, & 18105)	$ 26,327	1.9%
Census Tract 16, Lehigh County, PA (18102)	$ 26,807	0.0%
Census Tract 10, Lehigh County, PA (18101 & 18102)	$ 27,059	0.0%
Census Tract 12, Lehigh County, PA (18101 & 18102)	$ 29,583	0.0%
Census Tract 18, Lehigh County, PA (18101 & 18102)	$ 29,846	0.4%
Census Tract 9, Lehigh County, PA (18102)	$ 32,096	4.4%
Census Tract 7, Lehigh County, PA (18052 & 18102)	$ 32,760	0.5%
Census Tract 96, Lehigh County, PA (18109)	$ 34,217	0.0%
Census Tract 5, Lehigh County, PA (18101 & 18102)	$ 34,528	2.0%
Average of 10 Census Tracts	$ 29,842	0.9%
Pennsylvania	$ 61,744	2.6%
National	$ 62,843	2.1%

Figure 28: Data is reported from the 5-year ACS (2015-2019) estimates by the U.S. Census Bureau

Homelessness is another important indicator to when assessing housing. Each year, the United States Department of Housing and Urban Development (HUD) collects homelessness data across the country, also known as the Continuums of Care data. As of January 2020, an estimated 13,375 people in Pennsylvania experienced homelessness on any given day.[93] Of the 13,375 people who reported experiencing homelessness, 1,550 were family households, 977 were Veterans, 716 were unaccompanied young adults (ages 18-24), and 1,772 were individuals experiencing chronic homelessness.[94]

Each school year, the Pennsylvania Education for Children and Youth Experiencing Homelessness Program records the number of homeless students served by the program. The population includes children under the age of 5 and youth enrolled in pre-K through 12th grade.[95] The unique count is based on where the child was identified as homeless and attributed to the local education agency.[96] Of the eight counties that St. Luke's reaches in Pennsylvania, 7,656 students were identified as homeless in the 2018-2019 school year. This number does not encompass the entire child homeless population as it does not include children who were not served by this program (e.g., students not in the Pennsylvania public school system). During the 2018-2019 school year, Lehigh county reported 1,278 homeless students, which is slightly less than the previous school year (1,396).[97]

The Robert Wood Johnson Foundation also produces County Health Rankings measuring social determinants of health. One measure pertinent to housing is the percent of people living with severe housing problems. A household is considered to have a severe housing problem if one or more of these conditions is met: lacking a complete kitchen, lacking complete plumbing facilities, house is overcrowded, or the house is severely cost-burdened.[98] Lehigh county ranks 61 out of 67 Pennsylvania counties for severe housing problems, with 1 ranked having the least amount of problems, and 16% of residents in Lehigh county have one or more of the housing problems listed above, compared to 15% of households in Pennsylvania.[99]

"Some families are dealing with major overcrowding in their residence that has been increased by the pandemic. Others are being priced out of the housing market, with landlords selling properties because the market is so hot right now."

[93] https://www.usich.gov/homelessness-statistics/pa/
[94] https://files.hudexchange.info/reports/published/
CoC_PopSub_State_PA_2019.pdf
[95] https://www.education.pa.gov/Documents/K-12/Homeless%20Education/Reports/2018-19%20Pennsylvania%20ECYEH%20Counts%20by%20Region%20County%20State.pdf
[96] https://www.education.pa.gov/Documents/K-12/Homeless%20Education/Reports/2018-19%20Pennsylvania%20ECYEH%20Counts%20by%20Region%20County%20State.pdf
[97] https://www.education.pa.gov/Documents/K-12/Homeless%20Education/Reports/2017-18%20Unique%20and%20Duplicate%20Counts%20by%20County.pdf
[98] https://www.countyhealthrankings.org/app/pennsylvania/2020/measure/factors/136/description
[99]https://www.countyhealthrankings.org/app/pennsylvania/2021/compare/snapshot?counties=42_017%2B42_011%2B42_025%2B42_077%2B42_089%2B42_091%2B42_095%2B42_107%2B34_041

"There is rental assistance available to many in the community, but individuals may not know what is available to them and don't apply. This will lead to increased eviction and homelessness, which in turn will culminate with lots of negative health conditions."

Air and Water Quality

Air quality is a growing concern, especially in urbanized and industrialized areas. Poor air quality can irritate the eyes, nose, and throat, and also cause long term health effects.[100] Air quality is typically assessed by two components, ozone (O_3) and Particulate Matter (PM). Ozone is a gas molecule that is harmful to breathe and aggressively attacks lung tissue. Ozone is dangerous because it can be carried by wind far downstream, causing harm to people in multiple areas. Ozone can also cause premature death, immediate breathing problems, long term exposure risks, and potential cardiovascular harm.[101] PM is a particle that occupies the air we breathe but is small enough that we cannot see it unless there are large amounts of PM in one area. Large amounts of PM would result in reduced visibility, or haziness in the air. PM 2.5 is the smallest particle and most dangerous size because it can easily pass through lung tissue and into the blood stream.[102] Objectives for environmental health determined by Healthy People 2030 are to increase the proportion of people with safe water to drink, reduce the amount of toxic pollutants in the environment, and to reduce the number of days people are exposed to unhealthy air.[103]

Allentown and Sacred Heart (Lehigh)				
	Weight average	Orange days	Red days	Purple days
High Ozone	2.7	8	0	0
High PM	0	1	0	0

Figure 29: Orange- unhealthy for sensitive groups, Red- unhealthy, Purple- very unhealthy, DNC- Did Not Collect

According to the American Lung Association, Lehigh county earned a 'D' for high ozone days for 2016-2018. The weighted average of O_3 was 2.7 and the county had a total of 8 orange days. Orange days are characterized as unhealthy days for sensitive groups. Lehigh county earned a 'B' for PM with a 0.0 weight average and 1 orange day.
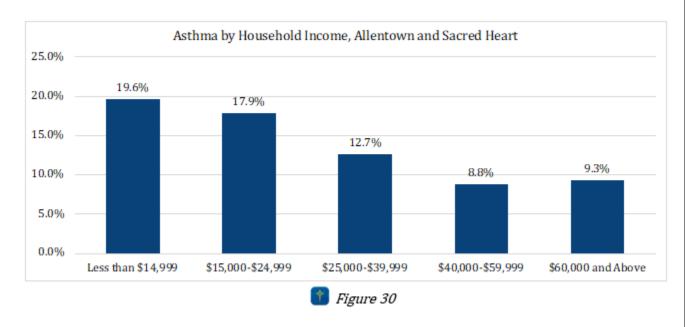
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[100] https://www.sparetheair.org/understanding-air-quality/air-pollutants-and-health-effects/whos-at-risk
[101] https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/ozone
[102] https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/particle-pollution
[103] https://health.gov/healthypeople/objectives-and-data/browse-objectives/environmental-health

Additionally, the CHNA survey asks respondents to indicate if they have ever been diagnosed with asthma. When distributed by income, 19.6% of respondents in the Allentown, Sacred Heart, and Star Community Health service area who make less than $14,999 have asthma. Although the rate of asthma for $60,000 and above is 9.3%, for those who make $100,000 and above, only 8.5% have asthma, the lowest of all income brackets. Respondents with lower incomes may have higher asthma rates due to location of housing, quality of air in their neighborhood, and lack of access to air purifiers.

Asthma by Household Income, Allentown and Sacred Heart

Income Bracket	Asthma %
Less than $14,999	19.6%
$15,000-$24,999	17.9%
$25,000-$39,999	12.7%
$40,000-$59,999	8.8%
$60,000 and Above	9.3%

Figure 30

Water quality is another important aspect of the environment. Water is delivered in two ways, through wells and through municipalities. Each municipality is required to report water quality reports each year, but well quality is much harder to track because it is mostly unregulated by the state. Pennsylvania's Department of Environmental Protection (DEP) water report in 2019 indicated that 11% of Pennsylvania households use well water and 89% of households use community water systems.[104] The report tracks violations within the Maximum Contaminant Level (MCL) which is the highest level of contaminant allowed in drinking water. The water can have some contaminants if it does not exceed the MCL. This is important to note because even though a water system does not have violations, it does not necessarily mean the water is completely safe. The water report also tracks the Maximum Residual Disinfectant Level (MRDL) which limits the amount of disinfectants allowed in safe drinking water.[105] Some of the typical contaminants tested are chlorine, fluoride, radium, turbidity, organic carbon, lead, and copper.[106] Water contaminants can result in a variety of negative health impacts, like gastrointestinal illness, worsened nervous system or reproductive system, and a variety of diseases (e.g., cancer).[107] The effects can also be short term or long term, while also going unseen, potentially worsening the effects over time.

[104]http://files.dep.state.pa.us/Water/BSDW/DrinkingWaterManagement/PublicDrinkingWater/PA_DEP_2019_Annual_Compliance_Report.pdf
[105] https://www.state.nj.us/dep/watersupply/pdf/violations2019.pdf
[106] http://files.dep.state.pa.us/Water/BSDW/DrinkingWaterManagement/PublicDrinkingWater/PA_DEP_2019_Annual_Compliance_Report.pdf
[107] https://www.epa.gov/report-environment/drinking-water

Lehigh county uses the Lehigh County Authority to report on water quality. The 2019 report showed no violations in contaminant level. The Lehigh County Authority tests for other contaminants in addition to those specified by the EPA, specifically: microbiological contaminants, radioactive contaminants, inorganic contaminants, disinfection by-products, volatile organic contaminants and synthetic organic contaminants. None of these were found in the Lehigh county water.[108] It is also important to understand the risk of lead in drinking water. While most counties in the St. Luke's service area do not have lead that contaminates drinking water from the source, lead pipes, faucets, and other risks of lead poisoning may exist in homes throughout the service area. Higher prevalence for lead poisoning is found in low income homes.[109]

Transportation

The type of transportation a person takes to work can be a good indicator of health. Walking, biking, or taking public transportation to work promotes regular physical activity and decreases air pollution, which can in turn decrease chronic diseases and obesity rates.[110] A goal of Healthy People 2030 is to increase the amount of people using public transportation to get to work.[111] People who drive to work are less likely to reach the recommended physical activity goal for the day; driving to work can also have a significant effect on obesity, diabetes, and heart disease.[112] However, it is not always feasible for someone to walk, bike, or take public transportation to work as many cities lack the proper infrastructure.

Figure 31 shows the modes of transportation used to get to work by people in Lehigh county, Pennsylvania, and the United States. For all three geographies, most people drive alone to work. Lehigh county reported 80.6% of commuters drive alone to work, which is slightly higher than Pennsylvania (75.9%) and the United States (76.3%). However, only a small percentage of people commute to work via public transportation or walking. Though a large portion of the Lehigh county population commutes to work by car, 8.7% of people do not have access to a car.[113] This is slightly above the United States percentage (8.6%) and below the Pennsylvania percentage. People who do not have access to a care must rely on public transportation, walking, or other modes of transportation. This can be an issue because poor public transportation and lack of walkability in some parts of the county may lead to individuals missing work, health appointments, or health screenings, which are crucial to healthy living.

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[108] https://lehighcountyauthority.org/wp-content/uploads/AWD.pdf
[109] https://www.cdc.gov/nceh/lead/prevention/populations.htm?CDC_AA_refVal=https%3A%2F%2F
[110] https://ephtracking.cdc.gov/showCommunityDesignAddLinkTypesOfTransportationToWork
[111] https://health.gov/healthypeople/objectives-and-data/browse-objectives/transportation
[112] https://ephtracking.cdc.gov/showCommunityDesignAddLinkTypesOfTransportationToWork
[113] Data.census.gov (Table B25044)

Residents of Lehigh county do have some access to public transportation, specifically Lehigh and Northampton Transportation Authority (LANTA). LANTA offers 35 different buses that travel on routes throughout Lehigh and Northampton county. LANTA also offers the LANTA Van service for individuals who are disabled, needing medical assistance, and or 65 years or older.[114] However, routes and frequency of services is limited.

Allentown and Sacred Heart (Lehigh)			
Mode of Transportation to Work	Lehigh %	PA %	US %
Drive Alone (Car, Truck or Van)	80.6%	75.9%	76.3%
Carpool	9.5%	8.5%	9.0%
Use Public Transportation	2.1%	5.6%	5.0%
Taxi	0.0%	0.1%	0.2%
Motorcycle	0.0%	0.1%	0.2%
Bike	0.2%	0.5%	0.5%
Walk	2.3%	3.6%	2.7%
Other	0.6%	0.8%	0.9%
Work From Home	4.6%	4.9%	5.2%

Figure 31: Data represented in this table was gathered from the 2015-2019 5 Year ACS Estimates by the US Census Bureau

Clinical Care

•••••••••••••••••••••• Access to Care ••••••••••••••••••••••

"Having someone from certain areas and certain neighborhoods even in Allentown, trying to get them to services that really are only several miles away or possibly even in the next town, it is like asking someone to get to the far side of the moon. It is almost an impossibility."

[114] https://www.lantabus.com/lantavan/

Primary Care Providers (PCPs)

Primary care providers (PCPs) are gatekeepers to the healthcare system. Often, they are a patient's first point of contact and referral to further care by specialists. County Health Rankings reports a ratio of the number of individuals in a population served by one physician in the county. The smaller the ratio, the more physicians there are in the area in relation to population size. Lehigh county has a ratio of 990:1, which outperforms Pennsylvania overall ratio at 1,230:1 and U.S. top performers with a ratio of 1,030:1.[115]

To assess the frequency of visits, the CHNA survey asks how long it has been since the respondent last visited their PCP. The majority of respondents from the Allentown, Sacred Heart, and Star Community Health service area have been to a PCP within the last year (81.5%), followed by within the past 2 years (9.6%), within the past 5 years (3.6%), and 5 years or more (2.4%). Additionally, 2.9% of respondents do not know the last time they saw PCP or do not have a PCP; the highest of all service areas in the network. It is also important to look at an individual's last visit to a primary care physician and their type of insurance.

Last PCP Visit, Allentown and Scared Heart

- Within the past year — 81.5%
- Within the past 2 years — 9.6%
- Within the past 5 years — 3.6%
- 5 or more years — 2.4%
- Don't Know — 1.3%
- I don't have a primary care doctor — 1.6%

Figure 32

Lack of insurance or high copays may keep individuals from seeking medical attention, which could result in worsened health conditions. As seen in the CHNA survey results, lack of insurance may hinder the frequency of doctor's visits. For respondents who do not have insurance coverage and pay cash, only 54% have been to a PCP within the past year; this is significantly lower than those with Medicare (94%), Medicaid (80%), and private insurance (77%). Additionally, respondents who do not know what type of insurance they have and respondents who do not have insurance coverage account for the largest percentage without a PCP, 10% and 8%, respectively. These findings reinforce the need for Federally Qualified Health Centers (FQHC) like Star Community Health, a FQHC look-alike, which offers services on a sliding pay scale.

> *"The pandemic has highlighted the very deep health care disparities that we have here. There are world class health care and services here, but these services aren't equally attainable to all in the community. This inequality has been on full display during the last year as the pandemic arrived."*

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[115] https://www.countyhealthrankings.org/

Figure 33

Survey respondents were asked where they go most often when they are sick or in need of medical advice to get and understanding of their use of service providers. The majority of respondents go to a doctor's office (79%), followed by an urgent care center (7.3%), using the Internet (5.4%), and emergency room visit (3.5%). While a majority of respondents use a doctor's office, bringing in more PCPs who have diverse backgrounds and accept many types of insurances will allow more individuals to seek help at a doctor's office rather than on the Internet or in an emergency room.

Figure 34

44

Dentists

The Mayo Clinic refers to dental health as "a window to your overall health."[116] Not only can oral health pain be debilitating, but in some circumstances, it can affect overall daily life, impacting the ability to go to work or school. A buildup of bad bacteria in your mouth due to poor oral hygiene can cause respiratory, digestive, and cardiovascular diseases.

Lehigh county's ratio of individuals in the population to dentist is 1,130:1, which scores better than Pennsylvania overall with a ratio of 1,410:1 and U.S. top performers with a ratio of 1,210:1. In recent years, there has been a trend of an increasing number of dentists in the county.[117]

In the Allentown, Sacred Heart, and Star Community Health service area, 67.2% of respondents have seen a dentist within the past year, followed by 15.4% within the past 2 years, 6.5% within the past 5 years, and 5.6% five or more years ago. Results show that 5.4% of respondents do not have a dentist. Additionally, the majority of respondents use private insurance for dental care (60.7%), followed by 27.6% with no coverage, 11.4% with Medicaid, and 0.4% with Veteran's Administration.

Last Dental Visit, Allentown and Sacred Heart

- Within the past year
- Within the past 2 years
- Within the past 5 years
- 5 or more years
- I do not have a dentist

Figure 35

Mental Health Providers

Mental health has also been identified as a significant concern facing the communities in all counties served by SLUHN and Star Community Health. The COVID-19 pandemic has greatly impacted access to mental healthcare. As an indicator of mental healthcare providers and access in the county, Lehigh has an overall ratio of population to mental healthcare providers of 510:1 which is worse than Pennsylvania overall at 450:1, and far below U.S. top performers at 270:1.[118]

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[116] https://www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/dental/art-20047475
[117] https://www.countyhealthrankings.org/
[118] https://www.countyhealthrankings.org/

Health Insurance

Uninsured rates represent a major barrier to access to care. Often, uninsured patients get very ill before seeking care, leading to higher medical costs. An issue that is prevalent in many areas is the lack of providers ability that take a range of insurances. Federally Qualified Health Centers (FQHC) and FQHC look-alikes (e.g., Star Community Health) are a crucial step in treating people without insurance or with insurance that has minimal coverage. The Health Resources and Services Administration (HRSA) defines a community-based health care provider as one who offers primary care services to underserved areas.[119] FQHCs provide services on a sliding fee scale based on the patient's ability to pay. While FQHCs are crucial to addressing health needs, knowledge and awareness that FQHCs exist and take all or no insurance is equally important. Community Health Workers (CHW) are a vital support to bridge the health gap. CHWs are defined as "a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served."[120] The CHW is the liaison between health and social services and the community. They serve an important role in improving quality of services with cultural competency, increasing health knowledge in the community, and providing advocacy. CHWs help inform the population of services available to those with any type or no insurance, helping to increase access.

Uninsured rates in Lehigh county stand at 6.5% overall, while the Allentown, Sacred Heart, and Star Community Health service area is slightly higher (6.7%). When broken down by age, 3.5% of people 18 years and younger in the Allentown, Sacred Heart, and Star Community Health service area are uninsured; 9.6% of people are between 18-64 years old, and 0.4% are 65 and older. In Pennsylvania, 5.7% of people are uninsured, compared to 8.8% of people in the United States.[121]

In the Allentown, Sacred Heart, and Star Community Health service area, individuals whose household income is less than $14,999 primarily use Medicaid (42.4%), don't know what insurance they have (26%), or have no coverage (19.3%). Conversely, those whose household income is $100,000 or above, primarily have private insurance (34.7%) or Veterans Administration (30.8%). No one from the service area who uses Medicaid makes $100,000 or more. In addition to insurance and income, we assess the relationship of insurance and ethnicity (Figure 37). These findings reinforce the need for FQHCs in St. Luke's service areas along with doctors who accept Medicaid and uninsured patients.
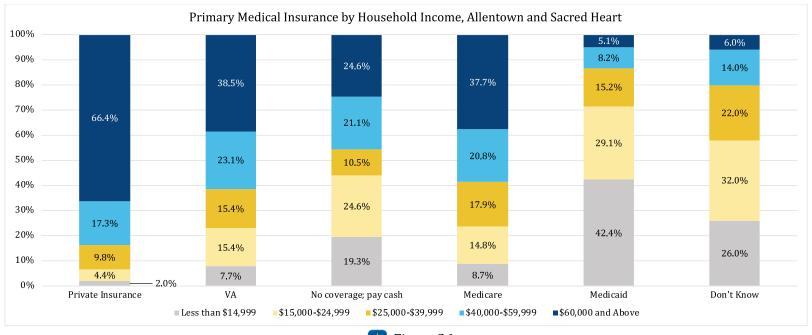
> *"Affordability of health care that covers the real needs without large deductibles is a problem. As an employer we now cover less types of care, and employees are struggling to keep up."*
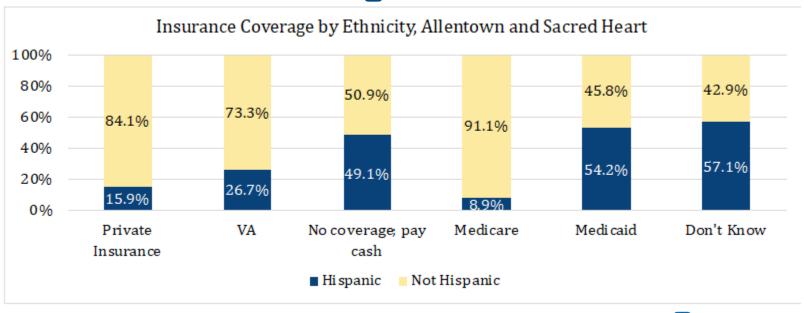
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[119] https://www.hrsa.gov/opa/eligibility-and-registration/health-centers/fqhc/index.html
[120] https://www.apha.org/apha-communities/member-sections/community-health-workers
[121] https://data.census.gov/cedsci/

Primary Medical Insurance by Household Income, Allentown and Sacred Heart

Legend: Less than $14,999 | $15,000-$24,999 | $25,000-$39,999 | $40,000-$59,999 | $60,000 and Above

Figure 36

Insurance Coverage by Ethnicity, Allentown and Sacred Heart
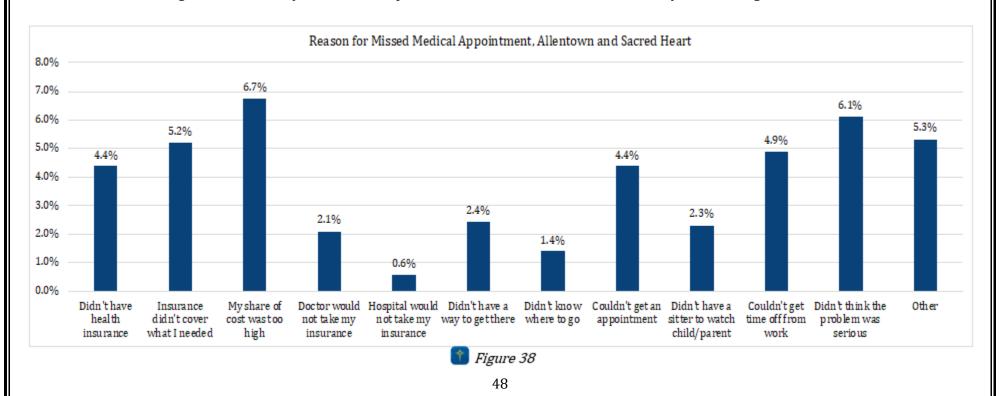

Legend: Hispanic | Not Hispanic

Figure 37

Hospital Data

St. Luke's is one of two major health networks in the Lehigh Valley with a variety of health services ranging from behavioral health to cardiology to gastroenterology and more. St. Luke's addresses health inequities through partnerships in the communities with nonprofits, schools, and businesses. Through these partnerships we implement enhanced care, health initiatives, support, and outreach for health education, healthy lifestyles, and preventative care.

When asked to indicate reasons for any recently missed medical appointments, the top three reasons reported in the Allentown, Sacred Heart, and Star Community Health service area were: share of cost was too high (6.7%), didn't think the problem was serious enough (6.1%), and other (5.3%). Additionally, 5.2% of respondents indicated a missed appointment because insurance did not cover what they needed. Only 0.6% of respondents indicated their reason for missing an appointment was due to the hospital not taking their insurance. These findings further reinforce the need for adequate health insurance and facilities that offer assistance or sliding scales to lessen the financial burden of healthcare. In order to better support our service area population, St. Luke's provides charity care to help alleviate some of the financial burden. During the 2020 fiscal year, St. Luke's provided $287.3 million dollars in charity care throughout the network.
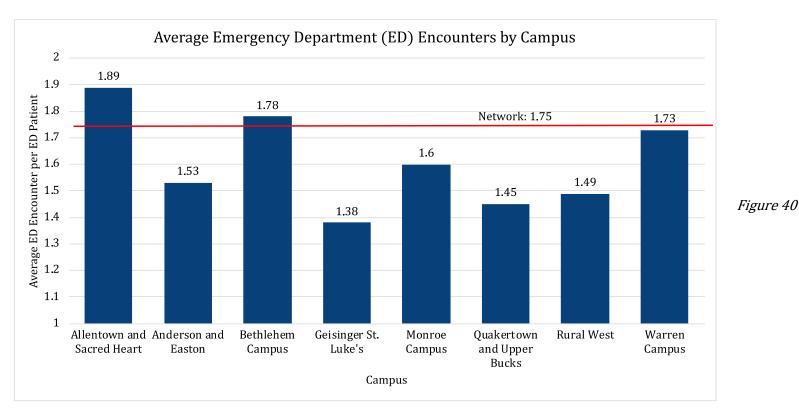

Figure 38

48

Top Reasons for Hospitalization

Hospital data helps us to better understand the major health issues in our community. This allows us, from both a treatment and prevention perspective, to focus efforts on priority areas most affecting the health of our patient population. The top 10 reasons for hospitalization at St. Luke's Allentown and Sacred Heart campuses are listed in Figure 39. Single live born infant delivered vaginally is the most common diagnosis during an inpatient encounter, accounting for 4.6% of Allentown and Sacred Heart total patient encounters.

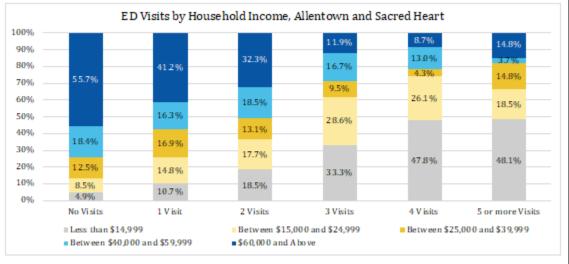| Principal Diagnosis	Ranking
Single live born infant, delivered vaginally	1
Sepsis, unspecified organism	2
Single live born infant, delivered by cesarean	3
Acute kidney failure, unspecified	4
Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	5
Schizoaffective disorder, bipolar type	6
Other specified sepsis	7
Hypertensive heart disease with heart failure	8
Major depressive disorder, recurrent severe without psychotic features	9
Morbid (severe) obesity due to excess calories	10

Figure 39

Emergency Department Encounters

In fiscal year 2020, the average number of Emergency Department (ED) encounters per ED patient seen at St. Luke's Allentown and Sacred Heart campuses was 1.89, which is above the network average and the campus with the highest number of ED encounters per ED patient in the network. Note that multiple service areas contain multiple hospitals and therefore multiple EDs. The ED encounters are an average of the encounters at those hospitals.

Average Emergency Department (ED) Encounters by Campus

Figure 40

ED utilization can be used as an indicator to gauge lack of PCP coverage. When comparing ED visits by household income, a clear finding emerges: those who make less than $14,999 frequent emergency departments the most of any income bracket and 48.1% of respondents who indicated visiting an ED 5 or more times in the past year make less than $14,999. Additionally, those who make $60,000 and above frequent the ED the lowest of any income bracket; 55.7% of respondents who have not visited an ED in the past year make $60,000 and above. These findings suggest that there needs to be more affordable PCP access for lower income patients, as well as education related to appropriate ED use.

Figure 41

Health Behaviors

Obesity

According to the CDC, obese adults have a higher risk for developing heart disease, type 2 diabetes and certain cancers, and, as a result, obesity is estimated to cost the U.S. healthcare system $147 billion annually.[122] Medical costs for those living with obesity are estimated to be $1,429 higher than the medical costs of an individual whose BMI falls into the normal weight category. Many factors play a role in the obesity epidemic and its rapid increase over the last few decades: lack of vegetable consumption, lack of physical activity, poor portion control, and poor access to outdoor recreational activities and healthy foods.

In 2018, 42.4% of U.S. adults were obese—nearly 12% increase since 2000.[123] The 2020 report by Trust for America's Health (TFAH) using 2019 data reports that "socioeconomic factors such as poverty and discrimination have contributed to higher rates of obesity among certain racial and ethnic populations. Black adults have the highest level of adult obesity nationally at 49.6%; that rate is driven in large part by an adult obesity rate among Black women of 56.9%."[124] Additionally, concerns have risen in recent years as obesity is an underlying health condition associated with some of the most serious consequences of COVID-19. This means that 42% of all Americans are at increased risk of serious, possibly fatal, health impacts from COVID-19 due to their weight and health conditions related to obesity.[125]

The TFAH reported that Pennsylvania ranks 22 out of 51 states (including Washington, DC) for percentage of adults with obesity and ranks 21 for adults who are overweight.[126] Additionally, 41.5% of Black adults, 30.9% of Hispanic/Latino adults and 31.3% of White adults in Pennsylvania are obese. The age bracket with the highest percentage of adults with obesity in Pennsylvania is 45-64 years old (38.2%). When assessing childhood obesity, the most recent report found that 12.8% of children ages 2-4 and 17.4% of children ages 10-17 in Pennsylvania are obese.

Robert Wood Johnson's County Health Rankings also assess obesity by measuring the percentage of the adult population (age 20 and older) that reports a body mass index (BMI) greater than or equal to 30 kg/m². According to the CDC, "Body Mass Index (BMI) is a person's weight in kilograms divided by the square of height in meters. A high BMI can be an indicator of high body fatness. BMI can be used to screen for

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[122] https://www.cdc.gov/obesity/adult/causes.html
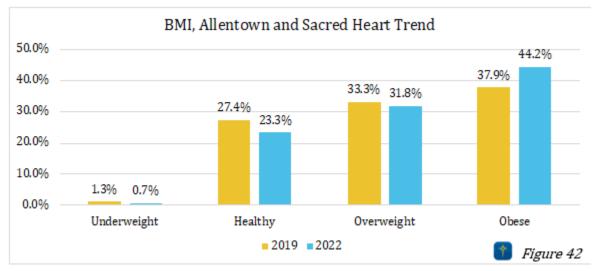[123] https://www.cdc.gov/obesity/data/adult.html
[124] https://www.tfah.org/report-details/state-of-obesity-2020/
[125] https://www.tfah.org/report-details/state-of-obesity-2020/
[126] https://www.tfah.org/wp-content/uploads/2020/09/TFAHObesityReport_20.pdf

weight categories that may lead to health problems, but it is not diagnostic of the body fatness or health of an individual."[127] A BMI below 18.5 is considered underweight, 18.5-24.9 is considered normal, 25.0-29.9 is considered overweight, and 30 or above is considered obese. The County Health Rankings reports that 31% of adults in Pennsylvania are obese. Lehigh county also reports that 31% of adults in the county are obese.

Allentown, Sacred Heart, and Star Community Health service area CHNA survey respondents had a small percentage underweight (0.7%), 23.3% healthy weight, 31.8% overweight, and 44.2% obese.

Figure 42

While slightly higher than the national obesity average, the majority of respondents at unhealthy weights indicate a need for stronger emphasis on healthy diet, education, access to fruits and vegetables, and other healthy food options. In addition, trends reflected in the date from 2019 to 2022 indicate a significant rise in obesity during the last three years, with a decrease in healthy, overweight, and underweight populations. The need to support our patients is critical as we see these trends increase.

"The obesity crisis has just been exacerbated by the pandemic. Many individuals, especially in lower income areas, have not had access to recreation and opportunities for exercise."

Physical Inactivity

According to the CDC, fewer than 1 in 4 children get enough physical exercise and only 1 in 4 adults meet physical activity guidelines.[128] Healthy People 2030 aim to reduce the proportion of adults who engage in no leisure time physical activity and increase the proportion of adults who meet current physical aerobic physical activity recommendations of exercise 30 minutes a day 5 days a week.[129]

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[127] https://www.cdc.gov/healthyweight/assessing/bmi/index.html
[128] https://www.cdc.gov/physicalactivity/data/index.html
[129] https://health.gov/healthypeople/objectives-and-data/browse-onjectives/physical-activity/

County Health Rankings measure physical inactivity as the percentage of adults aged 20 and over reporting no leisure-time physical activity. Robert Wood Johnson reports that "physical activity improves sleep, cognitive ability, and bone and musculoskeletal health, as well as reduces risks of dementia. Physical inactivity is not only associated with individual behavior but also community conditions such as expenditures on recreational activities, access to infrastructure, and poverty."[130]

In Pennsylvania, 22% of adults, and 17% of adults in Lehigh county, report no leisure-time physical activity, which is the lowest of all service area counties. Additionally, the Rankings measure access to exercise opportunities, which "measures the percentage of individuals in a county who live reasonably close to a location for physical activity. Locations for physical activity are defined as parks or recreational facilities. Individuals are considered to have access to exercise opportunities if they: reside in a census block that is within a half mile of a park; or reside in an urban census block that is within one mile of a recreational facility; or reside in a rural census block that is within three miles of a recreational facility."[131] In Pennsylvania, 84% of individuals in have access to exercise opportunities, 82% in Lehigh county.
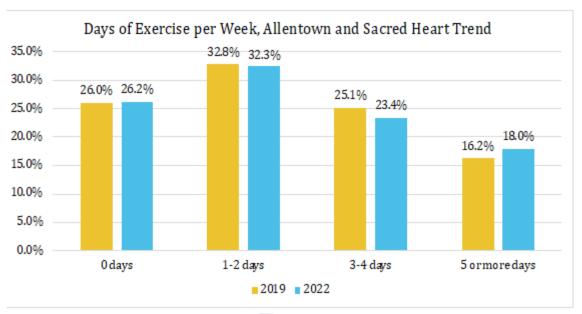

Figure 43

When asked how many days a respondent exercises 30 minutes, 26.2% of respondents from the Allentown, Sacred Heart, and Star Community Health service area indicated 0 days. However, 32.3% of respondents indicated exercising 1-2 days a week, 23.4% exercising 3-4 days a week, and 18% exercising 5 or more days a week- the Healthy People 2030 recommendation. Trends from 2019 to 2022 indicated a similar amount of exercise per week, or lack thereof, with only slight increases or decreases.
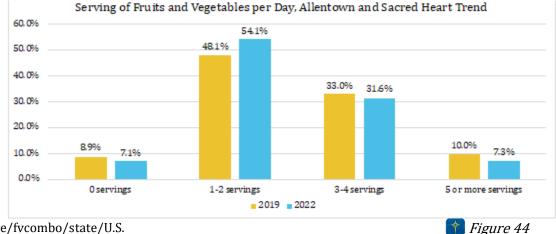
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[130] https://www.countyhealthrankings.org/
[131] https://www.countyhealthrankings.org/

Diet

Diet (i.e., fruit and vegetable consumption) plays a large role in overall health and reducing chronic disease. The CDC states that eating a diet filled with a variety of fruits and vegetables can reduce the risk of type 2 diabetes, certain cancer, cardiovascular disease—all which play a role in the top leading causes of death in the nation.

Released in February 2021, the CDC surveyed adults 20 years and older, finding that the majority of adults consumed a serving of fruit (67.3%) or vegetable (95%) on a given day, with more women reporting eating a serving of a fruit and vegetable on a given day.[132] Compared to CHNA survey results, 93.3% of network survey respondents and 92.9% of Allentown, Sacred Heart, and Star Community Health service area respondents report eating at least one serving or fruit or vegetables per day. Additionally, America's Health Rankings surveyed adults across the country asking respondents to indicate consuming two or more servings of fruit and three or more servings of vegetables daily (five servings total).[133] In Pennsylvania, 7% of adults consume two or more servings of fruit and three or more servings of vegetables daily along with 8% of adults in the United States.

The sweet food consumption NHANES survey assessed sweet food consumption of snack or meal bars, sweet bakery products, candy, and other desserts, but excluded fruit and all types of beverages. Sweet foods are typically a major source of energy, added sugar, and saturated fats with limited essential ingredients.[134] It is recommended to limit this consumption and emphasize a diet with nutrient-dense foods. The surveyed was asked to adults 20 and older, finding that 61% of adults ate sweet foods on any given day, with the percentage increasing among adults 60 years or older.[135] Sweet food consumption was also highest among the middle- and highest-income groups compared to the lowest income group.

In the 2022 CHNA survey, we found that only 7.3% of respondents from the Allentown, Sacred Heart, and Star Community Health service area eat 5 or more servings of fruits and vegetables per day. Most respondents (54.1%) eat 1-2 servings per day and 7.1% do not eat any servings. Trends from 2019 to 2022 indicate an increase in servings

Figure 44

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[132] https://www.cdc.gov/nchs/data/databriefs/db397-H.pdf
[133] https://www.americashealthrankings.org/explore/annual/measure/fvcombo/state/U.S.
[134] https://www.ars.usda.gov/ARSUserFiles/80400530/pdf/DBrief/34_Sweet_foods_children_1518.pdf
[135] https://www.ars.usda.gov/ARSUserFiles/80400530/pdf/DBrief/33_Sweet_foods_adults_1518.pdf

for the 1-2 per day respondents, and a decrease in respondents not having any servings by 1.8%.

Looking at fruit and vegetable consumption by income shows that it increases with income. Of CHNA survey respondents who make less than $14,999, 17.7% do not consume any fruits and vegetables and only 4.3% consume 5 or more fruits and vegetables a day- the recommended amount. The majority of respondents in each income bracket consume 1-2 servings of fruits and vegetables a day. Respondents who make $60,000 have the highest percentage of respondents who consume 5 or more servings a day.

Figure 45

Free or Reduced Lunch

During the 2018-2019 school year, 53.3% of students in Pennsylvania were eligible for free or reduced lunch.[136] Free or reduced lunch is a part of the National School Lunch Program (NSLP), a federally assisted meal program providing nutritionally balanced, low cost or free school lunches each day in public, private, and residential childcare institutions.[137] To qualify for the NSLP, families must have an income at or below 130% of the poverty level. In 2016, the NSLP reached 30.4 million children nationwide. In Lehigh county, an average of 57.1% of all students qualify for free or reduced lunch. Allentown City and Executive Education Academy report 100% of their students as eligible for free or reduced lunches and Southern Lehigh reports the lowest number of students eligible (17.5%).[138]

Percent of Children During 2018-2019 School Year with Free or Reduced Lunch Eligibility	
Lehigh--Southern Lehigh (Suburban)	17.5%
Lehigh--Northwestern Lehigh (Rural)	18.1%
Lehigh--Parkland (Suburban)	24.6%
Lehigh--East Penn (Suburban)	25.7%
Lehigh--Salisbury Township (Suburban)	41.2%
Lehigh--Northern Lehigh (Suburban)	45.3%
Lehigh--Lehigh Career & Tech Institute	47.3%
Lehigh--Arts Academy CS (N/A)	49.3%
Lehigh--Whitehall-Coplay (Suburban)	54.5%
Lehigh--Catasauqua Area (Suburban)	70.4%
Lehigh--Arts Academy Elem CS (N/A)	81.5%
Lehigh--Roberto Clemente CS (Urban)	87.6%
Lehigh--Lincoln Leadership Academy CS (Urban)	94.4%
Lehigh--Allentown City (Urban)	100%
Lehigh--Executive Education Academy CS (N/A)	100%
Average	57.1%

Figure 46

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[136] https://datacenter.kidscount.org/data/tables/2720-school-lunch--students-eligible-for-free-or-reduced-price-lunch?loc=40&loct=10#detailed/2/any/false/1740/any/10325
[137] https://www.fns.usda.gov/nslp
[138] https://datacenter.kidscount.org/data/tables/2720-school-lunch--students-eligible-

Sexual Activity

Healthy People 2030 reports that there are more than 20 million new cases of preventable sexually transmitted infections (STI) in the United States each year.[139] Healthy People 2030 objectives are to increase knowledge and education of sexual education across adolescents and adults, and to decrease the rate of STIs and sexually transmitted diseases (STDs). Adolescents may experience developmental changes that effect physical and mental health, potentially increasing risky behaviors. Risky behaviors increase the chances of STIs and teen pregnancy. Healthy People 2030 objectives for teen pregnancy are to reduce pregnancies in adolescents, increase the percentage of adolescents using effective birth control, and to increase the number of adolescents who receive formal sexual education before age 18.[140]

The Robert Wood Johnson Foundation's County Health Rankings assess two sexual activity measures: STI and teen births. The 2021 rankings use STI data that reflects the number of new chlamydia cases per 100,000 population; results show a 21% increase in both chlamydia and gonorrhea. Chlamydia is important to assess because it is the "most common bacterial sexually transmitted infection (STI) in North America and is one of the major causes of tubal infertility, ectopic pregnancy, pelvic inflammatory disease, and chronic pelvic pain."[141] Chlamydia also disproportionately impacts adolescent women and 1 in 20 sexually active women ages 14-24 have chlamydia.[142] In Pennsylvania, the rate is 463.4 new cases per 100,000 population. Lehigh county's rate is 511.9, the highest of all service area counties.

There are also strong connections between teen birth, poor socioeconomic, and/or mental health. Teenage mothers who give birth are less likely to achieve an education level beyond high school and are more likely to experience psychological distress.[143] The measure is represented by the number of births per 1,000 female population ages 15-19 years. In Pennsylvania, the rate is 17. The rate in Lehigh county is 21 per 1,000 population. In addition to the impact of teen pregnancy on mothers, the prevalence of low birthweight in teen pregnancy is significant. Low birthweight is when a baby is born weighing less than 5 pounds, 8 ounces. Approximately 1 in 12 babies (8%) in the United States is born with low birthweight. A low birthweight may have significant complications, including birth defects, infections, trouble eating, and trouble gaining weight.[144] Teen mothers (and mothers over 40) are highly likely to have a low birthweight child. Between 2015-2019, 8.2% of births in Lehigh county were considered low birthweight.

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for-free-or-reduced-price-lunch?loc=40&loct=10#detailed/2/any/false/1740/any/10325
[139] https://health.gov/healthypeople/objectives-and-data/browse-objectives/sexually-transmitted-infections
[140] https://health.gov/healthypeople/objectives-and-data/browse-objectives/adolescents
[141] https://www.countyhealthrankings.org/
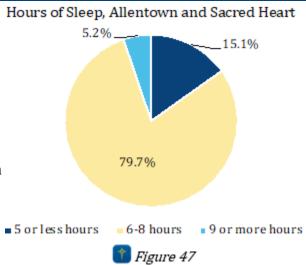[142] https://www.cdc.gov/std/chlamydia/stdfact-chlamydia-detailed.htm
[143] https://www.countyhealthrankings.org/
[144] https://www.marchofdimes.org/complications/low-birthweight.aspx#

Sleep

Sleep is an important part of a healthy lifestyle and a lack of sleep can have serious and negative health effects.[145] Healthy People 2030 also reports that about 1 in 3 adults do not get enough sleep.[146] Ongoing sleep deficiency has been linked to health conditions such as heart disease, stroke, depression, and anxiety.

Some of the objectives for Healthy People 2030 are to reduce the number of motor vehicle crashes due to exhaustion and to increase the number of children and adults who get enough sleep. The 2021 Robert Wood Johnson County Health Rankings assessed the percent of adults who report less than 7 hours of sleep on average. In Pennsylvania, 39% of adults report less than 7 hours of sleep and 38% of adults in Lehigh county get less than 7 hours of sleep a night. CHNA survey respondents in the Allentown, Sacred Heart, and Star Community Health service area reported that 79.7% got between 6-8 hours of sleep per night, with 15.1% reporting less than 5 hours of sleep per night and 5.2% reporting 9 hours or more.

Hours of Sleep, Allentown and Sacred Heart

5.2%   15.1%

79.7%

■ 5 or less hours   ■ 6-8 hours   ■ 9 or more hours

✝ Figure 47

The 2019 PAYS survey asked students to indicate if on average, they get less than 7 hours of sleep a night.[147] Many students in Pennsylvania reported averaging less than 7 hours of sleep a night (37.9%), with Lehigh county averages slightly higher (41.7%). The survey also asked if students "felt tired or sleepy during the day," "every day," or "several times" during the past two weeks. Across Pennsylvania, 64.7% of students indicated consistent sleepiness during the past 2 weeks and 67.2% of students in Lehigh county agreed with the statement, the highest percentage among service area counties.

Mental Health

Mental health has been an increasing issue over the last 10 years, even prior to COVID-19. Mental health disorders can affect people of all age and racial groups, but some populations are disproportionately affected.[148] Mental health disorders like anxiety and depression can affect people's ability to take part in healthy behaviors and result in physical health problems making it harder for people to get treatment for

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145 https://www.countyhealthrankings.org/
146 https://health.gov/healthypeople/objectives-and-data/browse-objectives/sleep
147 https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS)-2019.aspx
148 https://health.gov/healthypeople/objectives-and-data/browse-objectives/mental-health-and-mental-disorders

mental health disorders.[149] Goals for Healthy People 2030 include an increase of the proportion of people who get treatment for substance use and mental health disorders, increase the proportion of children and adolescents with symptoms of trauma who get treatment, increase quality of life for cancer survivors, reduce the suicide rate, and increase the proportion of public schools with a counselor, social worker, and psychologist. To help reach, educate, and connect people with mental health disorders, there is a local National Alliance on Mental Illness (NAMI) or related chapter in each service area. In Lehigh and Northampton county, there is the Lehigh Valley NAMI.[150]

According to the State of Mental Health in America 2021 Report, 19% of adults prior to COVID-19 experienced a mental illness. Now, 10.8% of Americans suffering from a mental illness are uninsured and 24% of adults with a mental illness report an unmet need for treatment.[151] The report ranks states on their prevalence rates and access to care for adults and youth. States (including the District of Columbia) ranked 1-13 have lower prevalence and higher access to care, while 40-51 have higher prevalence rates and lower access to care. For overall rankings, Pennsylvania ranks 5 for adults and 2 for youth, indicating a lower prevalence rate and higher access to care.[152] The 2021 report indicated that 19% of Americans report experiencing any mental illness (AMI) which is characterized as having a diagnosable mental, behavioral, or emotional disorder other than a developmental or substance use disorder. Pennsylvania ranks 11 with a 18.2% prevalence rate. Additionally, 26.8% of adults in Pennsylvania with AMI report having an unmet need (Figure 48).

The 2021 Report also reported 13.8% of youth in Pennsylvania ages 12-17 report suffering from at least one major depressive episode in the past year. A major depressive episode is "a period of two weeks or longer in which a person experiences certain symptoms of major depression: feelings of sadness and hopelessness, fatigue, weight gain or weight loss, changes in sleeping habits, loss of interest in activities, or thoughts of suicide."[153] Additionally, 9.7% of youth cope with severe major depression.

State of Mental Health in America 2021 State Adult Rankings			
	PA %	PA rank	US
Adults with Any Mental Illness (AMI)	18.2%	11	19.0%
Adults with Substance Use Disorder in the past year	7.3%	15	7.7%
Adults with serious thoughts of suicide	4.2%	12	4.3%
Adults with AMI who are uninsured	6.0%	8	10.8%
Adults with AMI who did not receive treatment	53.0%	21	57.0%
Adults with AMI reporting an unmet need	26.8%	44	23.6%
Adults with disability who could not see a doctor due to costs	22.5%	10	28.7%

Figure 48

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[149] https://health.gov/healthypeople/objectives-and-data/browse-objectives/mental-health-and-mental-disorders
[150] https://www.nami-lv.org/
[151] https://www.mhanational.org/issues/state-mental-health-america
[152] https://mhanational.org/issues/2021/ranking-states
[153] https://www.bridgestorecovery.com/major-depression/what-is-a-major-depressive-episode/

State of Mental Health in America 2021 State Youth Rankings			
	PA %	PA rank	US
Youth with at least on Major Depressive Episode (MDE) in the past year	11.9%	3	13.8%
Youth with Substance Use Disorder in the past year	7.1%	4	9.7%
Youth with severe MDE	3.4%	8	3.8%
Youth with MDE who did not receive mental health services	57.5%	28	59.6%
Youth with severe MDE who received some consistent treatment	37.1%	10	27.3%

Figure 49

"We were in a rough situation before COVID in terms of the size of the mental health problem here, and I fear what has happened during the last year has made this challenge even bigger."

During the COVID-19 pandemic, the National Center for Health Statistics (NCHS) partnered with the U.S. Census Bureau to conduct the Household Pulse Survey, asking people about the frequency of anxiety and depression symptoms they have experienced.[154] The ongoing survey was broken up into phases: Phase 1 ran April 23, 2020 to July 21, 2020, Phase 2 ran August 19, 2020 to October 26, 2020, Phase 3 ran October 28, 2020 to March 29, 2021, Phase 3.1 ran April 14 2021 to July 5, 2021, and Phase 3.2 ran July 21 to October 11, 2021. All Phases had periods of break in between. Nationally, 27.3% of adults reported experiencing symptoms of an anxiety disorder within the past 7 days at mid-October 2021, with the highest percentage at 37.2% in November 2020 and the lowest at 25.5% at the beginning of July 2021. Additionally, 21.8% of adults report experiencing symptoms of a depressive disorder within the past 7 days at mid-October 2021, with the highest percentage at 30.2% in December 2020 and the lowest 20.9% at the beginning of July 2021. When anxiety and depression symptoms were surveyed together, 31.6% of adults report experiencing symptoms of either an anxiety disorder or depressive disorder in the past 7 days at mid-October 2021, with the highest 42.6% at the end of November 2020 and the lowest at 29% at the beginning of July 2021. However, in Pennsylvania in mid-October 2021, 31% of people reported symptoms of an anxiety disorder in the past 7 days, which ranks 7 out of 51 states (including the District of Columbia). The higher the ranking, the higher the percentage. During this time in Pennsylvania, 24% of people report experiencing a depressive disorder in the past 7 days, ranking 13 out of 51. Lastly, when asked together, 33.8% of people in Pennsylvania report experiencing an anxiety disorder or depressive disorder, ranking 14 out of 51.

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[154] https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm

Starting in Phase 2, the Pulse survey began asking about mental healthcare. In mid-October 2020, 11% of people in both the U.S. and in Pennsylvania reported needing counseling or therapy in the last 4 weeks but not receiving care. Additionally, as of July 5, 2021, 18.6% of respondents across the U.S. delayed or did not get care in the last 4 weeks and 19% of respondents in Pennsylvania. Finally, in mid-October 2021, 10% of people in the U.S. at the time of the interview did not have health insurance. The uninsured rate at the time of the interview was consistently between 10 and 14% (8% in Pennsylvania) since the beginning (i.e., Phase 1).

Prior to COVID-19, depression was a significant issue in the U.S. and the residents of our service area. The National Institute of Mental Health (NIMH) defines depression as a mood disorder that causes "severe symptoms [that] affect how you feel, think, and handle daily activities, such as sleeping, eating, or working. To be diagnosed with depression, the symptoms must be present for at least two weeks."[155] Some examples of depression symptoms include: persistent, sad, anxious, or "empty" mood; feelings of hopelessness or pessimism; decreased energy or fatigue; difficulty concentrating, remembering or making decisions; and thoughts of death or suicide.

Depression can happen at any age but is more common in adulthood. In midlife or older adults, depression can co-occur with other serious medical illnesses (e.g., diabetes, cancer, heart disease, Parkinson's disease).[156] Risk factors include personal or family history of depression, major life changes, trauma, stress, and certain physical illnesses. However, depression can be treated with medications, psychotherapy (e.g., counseling), or a combination of both.

In Pennsylvania, the state surveyed the prevalence of depression on the 2019 Behavioral Health Risk Factor Surveillance System (BRFSS), which included depression, major depression, and minor depression (i.e., dysthymia). The survey found that 20% of people in Pennsylvania were depressed. The survey broke the counties into clusters, finding that 19.4% of Carbon, Lehigh, and Northampton report a depression diagnosis.[157]
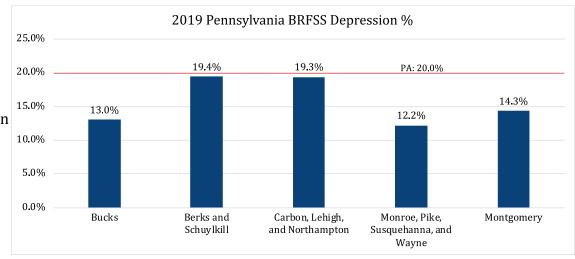
Figure 50

2019 Pennsylvania BRFSS Depression %

County cluster	%
Bucks	13.0%
Berks and Schuylkill	19.4%
Carbon, Lehigh, and Northampton	19.3%
Monroe, Pike, Susquehanna, and Wayne	12.2%
Montgomery	14.3%

PA: 20.0%

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[155] https://www.nimh.nih.gov/health/topics/depression/index.shtml
[156] https://www.nimh.nih.gov/health/topics/depression/index.shtml
[157] https://www.health.pa.gov/topics/HealthStatistics/BehavioralStatistics/BehavioralRiskPAAdults/Pages/BehavioralRisksPAAdults.aspx

Anxiety is another common mental disorder that affects people across the country. Anxiety is a normal part of life, but for a disorder, it is more than temporary worry or fear. The NIMH says "for a person with an anxiety disorder, the anxiety does not go away and can get worse over time. The symptoms can interfere with daily activities such as job performance, school work, and relationships."[158] Risk factors for anxiety disorders differ for each disorder, but generally include traits of shyness or behavioral inhibition in childhood, exposure to a stressful or negative life or environmental events in early childhood or adulthood, a history of anxiety in relatives, and some health conditions.[159] However, anxiety disorders can be treated with psychotherapy and/or medication. The CDC released a report (2020) of symptoms of generalized Anxiety Disorder (GAD) among adults in the United States. GAD displays excessive anxiety or worry most days for at least 6 months related to numerous aspects of life, causing significant problems in social interactions, school, and work.[160]

The CDC survey found that 9.5% of adults experienced mild symptoms of anxiety, 3.4% experienced moderate symptoms of anxiety, and 2.7% experienced severe symptoms of anxiety in the past 2 weeks, while 84.4% of people reported no or minimal symptoms.[161] The percentage of adults who experienced all types of symptoms was highest among those 18-29 years and decreased with age. One significant finding in the study was that women are more likely to experience all levels of anxiety symptoms than men.

In addition to anxiety and depression, substance use is another disorder that affects many Americans. A substance use and suicide study done by the Substance Abuse and Mental Health Services Administration (SAMHSA) in 2016 found that nearly 1 in 12 adults in the United States had a substance use disorder.[162] The NIMH describes substance use disorder as a mental health disorder that affects a person's brain and behavior with drug use and can interfere with a person's ability to work, go to school, and have good relationships with family and friends.[163]

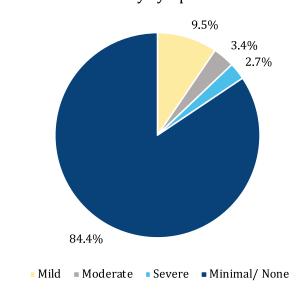**2019 CDC Percent of Adults in US Experiencing Anxiety Symptoms**

Figure 51

[158] https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml
[159] https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml
[160] https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml
[161] https://www.cdc.gov/nchs/products/databriefs/db378.htm
[162] https://store.samhsa.gov/sites/default/files/d7/priv/sma16-4935.pdf
[163] https://www.nimh.nih.gov/health/topics/substance-use-and-mental-health/index.shtml

Substance use disorders also co-occur at high prevalence rates with anxiety disorders, depression disorders, bipolar disorders, and attention-deficit disorder (ADHD).[164] Additionally, people with schizophrenia have higher rates of alcohol, tobacco, and drug use disorders than the general population. Approximately 1 in 4 individuals with a serious mental illness (i.e., diagnosable mental, behavioral, or emotional disorders that cause serious functional impairment interfering with one or more major life activities) also have a substance use disorder.[165] Substance use disorder vulnerability can largely be associated with genetics, but physical and emotional trauma also put people at a higher risk. The 2021 State of America report found that 7.7% of adults in America reported having a substance use disorder in the past year.[166]

In 2016, the SAMHSA study found that opiates, including heroin and prescription pain killers, were present in 20% of suicide deaths in the United States. Additionally, 22% of all suicide deaths in 2016 involved alcohol intoxication. Alcohol is a commonly used substance, but it can increase aggressiveness and constrict cognition, which impairs coping strategies and may increase risk of suicidal behaviors.[167]

Suicide involves dynamic interactions between national issues, community issues, families and relationships, and individual health and or well-being.[168] It has become a growing concern as it is now the 10th leading cause of death among all ages in the United States, but second leading cause of death for ages 10-34 and fourth for ages 35-54.[169] Suicide is likely to remain a significant issue during, and well beyond, the pandemic. The long-term effects on the general population, the economy, and vulnerable groups is unknown, but the impact on mental health and suicide risk may also be increased during the pandemic due to the stigma towards individuals with COVID-19 and their families.[170] Therefore, responses to suicide should target the whole population, focusing on particular risk factors like financial stressors, alcohol consumption, isolation, and access to care.[171]

A CDC Suicide Mortality report in the United States from 1999-2019 was released February 2021, outlining the suicide rate during a 10-year period. The age-adjusted rate in 2019 was 13.9 per 100,000 people, which is slightly lower than the rate in 2018 (14.2).[172] The 2019 crude

[164] https://www.drugabuse.gov/publications/research-reports/common-comorbidities-substance-use-disorders/part-1-connection-between-substance-use-disorders-mental-illness
[165] https://www.drugabuse.gov/publications/research-reports/common-comorbidities-substance-use-disorders/part-1-connection-between-substance-use-disorders-mental-illness
[166] https://mhanational.org/issues/2021/ranking-states
[167] https://store.samhsa.gov/sites/default/files/d7/priv/sma16-4935.pdf
[168] https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf
[169] https://www.cdc.gov/nchs/products/databriefs/db398.htm
[170] https://doi.org/10.1016/S2215-0366(20)30171-1
[171] https://doi.org/10.1016/S2215-0366(20)30171-1
[172] https://www.cdc.gov/nchs/products/databriefs/db398.htm

rate was 24.5 per 100,000 people.[173] In 2018, the National Hospital Ambulatory Medical Care Survey (NHAMCS) reported 312,000 emergency visits for self-injury.[174] CDC WONDER data (1999-2019) reports 11.9 per 100,000 suicides by intentional self-harm in 2019.[175]

Released in September 2020, the National Vital Statistics Report and CDC published a report on suicide among adolescent and youth ages 10-24 from 2000-2018. The average percent increase in suicide deaths among ages 10-24 in the U.S. from 2007-2009 and 2016-2018 is 47.1% nationally and 53.6% in Pennsylvania.[176] After a period of stability from 2000-2007, the suicide rate among youth and adolescents increased 57.4%, increasing from 6.8 deaths per 100,000 in 2007 to 10.7 per 100,000 in 2018. Pennsylvania's suicide rate in 2016-2018 was 10.6 per 100,000 deaths.[177]

In response to growing suicide rates, in September 2020 Pennsylvania created a suicide prevention plan, outlining 8 specific goals including prevention awareness efforts that reduce stigma and promote safety, help-seeking, and wellness; promote trauma-informed approaches to support all Pennsylvania residents as part of upstream, universal suicide prevention efforts; and provide quality training on the prevention of suicide and management of suicide risk across multiple sectors and settings.[178]

Some populations are more vulnerable than others to mental health disorders, substance use, and suicide. A SAMHSA study published in June 2020 found that Hispanic populations are more likely to lack high-quality evidence-based cultural grounded treatment options and have disparities in treatment outcomes.[179] Additionally, 1 in 20 Hispanic people do not receive services from a mental health specialist due to stigma, discrimination, and lack of knowledge about services. This is a population that should be targeted by providing culturally appropriate counseling and specialized services and outreach to encourage care-seeking behaviors.

"The incredible isolation faced by seniors during the pandemic is taking a toll on mental health in this population. You add in the metal health issues among the school-age population and among many parents and the intensity of the challenge is really big and getting worse."

Another population particularly vulnerable to suicide is Veterans. A 2019 National Veteran Suicide Prevention Report by the U.S. Veterans Affairs found that in 2017, veterans accounted for 13.5% of all deaths by suicide in the U.S.[180] Additionally, an average of 16.8 veterans died

[173] https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=BF94A69A2EA7B26A79CC60EBC4B1
[174] https://www.cdc.gov/nchs/fastats/suicide.htm
[175] https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=808281E7650E525FCF44896FE0B4
[176] https://www.cdc.gov/nchs/data/nvsr/nvsr69/nvsr-69-11-508.pdf
[177] https://www.cdc.gov/nchs/data/nvsr/nvsr69/nvsr-69-11-508.pdf
[178] https://www.dhs.pa.gov/Services/Mental-Health-In-PA/Documents/PA%20Statewide%20Suicide%20Prevention%20Plan.pdf
[179] https://mhttcnetwork.org/sites/default/files/2020-06/Mh_Disparities_Booklet.pdf
[180] https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf

by suicide each day in 2017. Suicide rates in veterans tend to be affected by economic disparities, homelessness, unemployment, disability status, community connection, and personal health and well-being. Veterans served by the Veterans Health Administration (VHA) who die by suicide are more likely to have sleep disorders, traumatic brain injuries, or a mental health disorder diagnosis.[181] These suicide rates tend to be higher in individuals who live in rural areas and individuals who are isolated. Veterans ages 18-34 years old had the highest suicide rate in 2017 (44.5 per 100,000), an increase of 76% from 2005 to 2017.[182] Veterans are a group that require specialized services and care that addresses the needs of the population.

"And there are very, very few resources available in the community for mental health. The ones that are there are fabulous but they are tapped out and there is a three to six month waiting list. If you are having a crisis, it doesn't work."

Substance Use

According to a 2019 U.S. Health CDC report, 11.7% of people in the United States have used an illicit drug in the past month.[183] An illicit drug is one that is highly addictive and forbidden by law. Some of these include marijuana, opioids (e.g., fentanyl, heroin), and stimulants (e.g., cocaine, methamphetamine). The Substance Use and Mental Health Services Administration (SAMHSA) defines substance use disorders as occurring "when the recurrent use of alcohol and/or drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home."[184] Substance use commonly co-occurs with mental health disorders. Please refer to the mental health section for more detailed information. Substance use is a growing concern in the United States and within our service areas, particularly related to the COVID-19 pandemic. To address the concerns with alcohol, drug, and tobacco use, some of Healthy People 2030's objectives are to reduce the number of adults who used drugs in the past month, increase the rate of people with a substance use disorder who got treatment in the past year, increase the proportion of adolescents who think substance use is risky, and to reduce the rate of opioid-related emergency department visits.[185]

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[181] https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf
[182] https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf
[183] https://www.cdc.gov/nchs/data/hus/2019/020-508.pdf
[184] https://www.samhsa.gov/find-help/disorders
[185] https://health.gov/healthypeople/objectives-and-data/browse-objectives/drug-and-alcohol-use

Alcohol

A 2019 CDC alcohol use report found that 25.1% of adults 18 and older have had at least one heavy drinking day (five or more drinks for men and four or more drinks for women) in the past year.[186] The percentage for binge drinking in women is 19.8% and 30.9% for men, with 1 in 4 adults in the nation drinking heavily in the last year.[187] In 2019, there were 24,110 alcoholic liver deaths in the U.S. and 39,043 alcohol-induced deaths, not including accidents and homicides. Pennsylvania's crude rate for alcohol-induced deaths was 8.2 per 100,000 population and 8.4 per 100,000 in Lehigh county.[188]

Pennsylvania's Behavioral Risk Factor Surveillance System (BRFSS) surveyed binge drinking, chronic drinking, and assessed the number of people in each county cluster that are at risk for a drinking problem. Binge drinking is defined as "a pattern of drinking that brings a person's blood alcohol concentration (BAC) to 0.08 g/dl or above. This typically happens when men consume 5 or more drinks or women consume 4 or more drinks in about 2 hours."[189] The CDC reports that binge drinking is the most common, costly, and deadly pattern of excessive alcohol use in the United States.[190] Binge drinking can be associated with many harmful consequences, including unintentional car crashes, violence, sexually transmitted diseases, fetal alcohol spectrum disorders, and cancer. Chronic drinking is when someone drinks more than the recommended one (women) or two (men) drinks a day, and more than seven (women) and fourteen (men) drinks in a week.[191] In 2019, the binge drinking percentage in Pennsylvania was 17% and chronic drinking was 6%. The report clustered certain counties together and reported on risk for a drinking problem. The Carbon, Lehigh, and Northampton cluster reported 7% of people at risk for a drinking problem.[192]

In 2018, the Census Bureau released a County Business Patterns (CBP) report, which included liquor stores. Liquor store access reports on businesses primarily engaged in retailing liquor and packaged alcoholic beverages (e.g., beer, wine). This excludes businesses preparing alcohol for consumption (e.g., bars, restaurants) or those that sell alcohol as a secondary retail product (e.g., gas stations, grocery stores). Research indicates that liquor stores are disproportionately located in predominantly Black census tracts.[193] This is an issue because

Vehicle Deaths with Alcohol Impairment

● Lehigh County (30%)
● US (11%)
● Pennsylvania (26%)

Figure 52

[186] https://www.cdc.gov/nchs/fastats/alcohol.htm
[187] https://public.tableau.com/profile/tina.norris#!/vizhome/FIGURE9_1/Dashboard9_1
[188] https://wonder.cdc.gov/controller/saved/D76/D99F021
[189] https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm
[190] https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm
[191] https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking
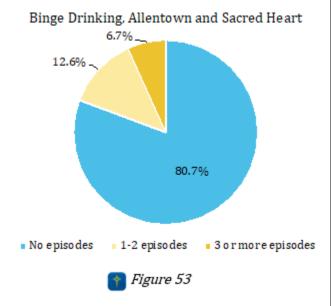[192]https://www.health.pa.gov/topics/HealthStatistics/BehavioralStatistics/BehavioralRiskPAAdults/Pages/BehavioralRisksPAAdults.aspx
[193] DOI: 10.1016/s0277-9536(00)00004-6

increased access to liquor poses a higher risk of developing alcohol use and/or a substance use disorder. The Allentown, Sacred Heart, and Star Community Health service area has 1.39 liquor stores per 10,000 population, while Lehigh county has 1.4 per 10,000 population.[194]

The Robert Wood Johnson Foundation also put out 2021 County Health Rankings on excessive drinking and alcohol impaired driving deaths. Excessive drinking measures the percentage of the county's adult population that reports binge or heavy drinking in the past 30 days. Pennsylvania reported 20% and Lehigh county reported 22%. The alcohol impaired driving measure used data from 2015-2019 assessing the percentage of motor vehicle deaths with alcohol impairment.

Alcohol reduces brain function and impairs thinking, which can hinder driving. Drivers 21-24 years old caused 27% of all alcohol impaired deaths between 2015-2019.[195] Pennsylvania reported 26% of all vehicle deaths with alcohol impairment. Lehigh county reported 30%, which ties with Bucks county as the highest percentage of all service area counties. Allentown, Sacred Heart, and Star Community Health CHNA survey respondents indicated low episodes of binge drinking, with no episodes representing the majority (80.7%), 1-2 episodes (12.6%) and 3 or more (6.7%).

Binge Drinking, Allentown and Sacred Heart

- No episodes: 80.7%
- 1-2 episodes: 12.6%
- 3 or more episodes: 6.7%

Figure 53

Stimulants

The drug overdose report for 1999-2019 by the CDC indicates that the age-adjusted rate of drug overdose deaths involving cocaine increased from 1.4 per 100,000 population in 1999 to 4.9 in 2019.[196] It is also reported that the age-adjusted rate of drug overdose deaths involving psychostimulants, which include drugs such as methamphetamine and methylphenidate, increased from 0.2 per 100,000 population in 1999 to 5.0 in 2019. Stimulants are dangerous and easily abused because they increase alertness, attention and energy. An overdose of stimulants can result in symptoms including rapid breathing, aggression, hallucinations, overactive reflexes, and more.[197] The 2019 Annual Surveillance Report of Drug-Related Risks and Outcomes from the CDC,[198] reported that in 2018 an estimated 5,529,000, or 2%

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[194] https://www.census.gov/programs-surveys/cbp.html
[195] https://www.countyhealthrankings.org/
[196] https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf
[197] https://www.drugabuse.gov/publications/drugfacts/prescription-stimulants
[198] https://www.cdc.gov/drugoverdose/pubs/related-publications.html

of people 12 years and older, reported cocaine use in the past year. This is highest among people ages 26-29 (6%) and ages 18-25 (5.8%). In 2018, an estimated 1,867,000, or 0.7% of people 12 years and older, reported methamphetamine use in the past year. This is highest among people ages 30-34 (1.6%), ages 26-29 (1.2%), and ages 35-39 (1.1%). In 2018, an estimated 5,109,000, or 1.9% of people 12 years and older, reported misuse of prescription stimulants in the past year. This is highest among people ages 18-25 (6.5%), followed by ages 26-29 (4.4%) and ages 30-34 (3.4%). According to the CDC health alert, overdose deaths involving cocaine increased by 26.5% from the 12-months ending in June 2019 to the 12-months ending in May 2020.[199]

Figure 54

Tobacco

The 2019 CDC Health Report indicated that in 2018, 21.5% of the population 12 years and older used any type of tobacco product.[200] The CDC and National Health Interview Survey of 2019 reported that 14.2% of adults 18 years and older currently smoke cigarettes[201] and 8.1%

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[199] https://emergency.cdc.gov/han/2020/han00438.asp
[200] https://www.cdc.gov/nchs/data/hus/2019/020-508.pdf
[201] https://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease202009-508.pdf

of adolescents grades 9-12 smoked cigarettes in the past 30 days.[202] The Robert Wood Johnson 2021 County Health Rankings report on adult smoking using data from 2018. Cigarette smoking is an important data point to capture because it has been an identified cause of various cancers, cardiovascular disease, and other adverse health outcomes.[203] Measuring tobacco use can help St. Luke's and other health networks to identify needs for smoking cessation and other smoking reduction programs. Adult smoking is measured as the percent of the adult population that report currently smoking every day or most days and have smoked at least 100 cigarettes in their lifetime.[204] In Pennsylvania and Lehigh county, 18% of adults smoke every day or have smoked at least 100 cigarettes in their lifetime. Additionally, the CDC National Center for Health Statistics (NCHS) released a secondhand smoke exposure report among nonsmoking adults in February 2021. Using data from 2015-2018, the report indicated that 20.8% of nonsmoking U.S. adults 18 and over were exposed to secondhand smoke, which was measured by cotinine in their blood, a metabolite of nicotine.[205] Some negative effects of secondhand smoke exposure include acute respiratory effects, coronary heart disease, stroke, lung cancer, and premature

Figure 55

death. The prevalence of secondhand exposure was highest for adults 18-39 (25.6%) than for adults 40-59 (19.1%) and adults 60 and over (17.6%). The highest secondhand exposure for adults by race and ethnicity were for non-Hispanic Black adults (39.7%) and lowest for Hispanic adults (17.2%). A promising finding from the report is that the prevalence of secondhand exposure declined from 27.7% in 2009 to 20.8% in 2018. A promising finding from the report is that the prevalence of secondhand exposure declined from 27.7% in 2009 to 20.8% in 2018.

When asked if respondents smoke, 11.3% of respondents from the Allentown, Sacred Heart, and Star Community Health service area responded yes. Of those who do smoke, cigarettes are the most common form of tobacco (10.3%), followed by cigars (1.5%), and e-cigarettes (1.3%). Additionally, 0.9% of respondents use hookahs, 0.3% use chew, 0.3% use pipes, 0.2% use snuff, and 0.1% use snus.

Figure 56

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[202] https://www.cdc.gov/nchs/data/hus/hus19-508.pdf#fig09
[203] https://www.countyhealthrankings.org/
[204] https://www.countyhealthrankings.org/
[205] https://www.cdc.gov/nchs/data/databriefs/db396-H.pdf

·························· Vape ··························

Vaping is another form of smoking nicotine, a highly addictive substance that is especially harmful to children and adolescents. Vapes, also known as e-cigarettes or electronic cigarettes, are "electronic devices that heat a liquid and produce an aerosol or mix of small particles in the air."[206] The CDC and National Health Interview Survey in 2019 found that 4.4% of adults 18 years and older use e-cigarettes[207] and 20.8% of adolescents grades 9-12 have used e-cigarettes in the past 30 days.[208] Electronic cigarettes were introduced in the United States around 2007 and the highest percentage of use is seen in adolescents.[209] Nicotine is most harmful for children and adolescents because the substance hinders brain development, which occurs until around age 25. Particularly, nicotine impacts attention, learning, mood, and impulse control, all of which are built and refined through childhood.[210] An e-cigarette study among middle and high school students in the United States found that 19.6% of high school students and 4.7% of middle school students reported current e-cigarette use.[211]

Of the current users, 82.9% used flavored e-cigarettes, including 84.7% of high school users and 73.9% of middle school users. The introduction of flavors such as fruit, candy, and mint has increased youth initiation into the use of tobacco products.[212] Another CDC study found that 23.6% of high school students and 6.7% of middle school students reported 30-day use of any tobacco product.[213] According to PAYS data, 19% of students in Pennsylvania used an e-cigarette or vape within the last 30 days.[214] Similar to other findings, the CHNA survey indicated that the age group that uses e-cigarettes/vape most frequently are 18-24 year old (5.1%), 1.4% of ages 25-34, 3.4% ages 35-44, 0.9% ages 45-54, 0.9% ages 55-64 years old, and 0.4% 65 years and older.

Figure 57

[206] https://www.cdc.gov/tobacco/basic_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html
[207] https://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease202009-508.pdf
[208] https://www.cdc.gov/nchs/data/hus/hus19-508.pdf#fig09
[209] https://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease202009-508.pdf
[210] https://www.cdc.gov/tobacco/basic_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html
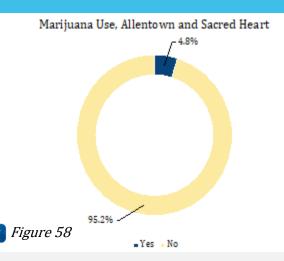[211] https://www.cdc.gov/mmwr/volumes/69/wr/mm6937e1.htm?s_cid=mm6937e1_w%20
[212] https://www.cdc.gov/mmwr/volumes/69/wr/mm6950a1.htm
[213] https://www.cdc.gov/mmwr/volumes/69/wr/mm6950a1.htm
[214] https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS).aspx

Marijuana

Marijuana is a psychotropic drug that is commonly used throughout the United States. In the short-term, marijuana can alter senses, change mood, impair memory, and impair body movement. In the long-term, marijuana can affect thinking, memory, and learning functions crucial to brain development.[215] Marijuana can also have physical effects which result in breathing problems and increased heart rate. The CDC 2019 U.S. Health Report indicated that 10.1% of people 12 and older used marijuana in the past 12 months during 2018.[216] However, the 2019 Annual Surveillance Report of Drug-Related Risks and Outcomes reported that 15.9% of people in the U.S. during 2018 who are 12 years and older used marijuana in the past 12 months.[217] This usage was highest among people ages 18-25 (34.8%) and ages 26-34 (29.6%). Marijuana use was the highest reported in the network, 4.8% by survey respondents in the Allentown, Sacred Heart, and Star Community Health service area.

Marijuana Use, Allentown and Sacred Heart — 4.8% / 95.2% — Yes / No

Figure 58

"People are increasingly turning to self-medication as a way of coping with the stress they are facing."

Opioids

The CDC reports that the opioid epidemic has occurred in three phases.[218] First, prescription opioids increased in the 1990s with overdose deaths continually increasing since 1999. The second phase began around 2010 with increased overdoses involving heroin. Heroin is an alternative to prescription opioids due to its similar effect on the body. The third phase began in 2013 with the introduction of synthetic opioids, like illicitly manufactured fentanyl. The CDC provides descriptions on the most commonly used opioids: prescription opioids, fentanyl, and heroin. Prescription opioids can be used to treat pain and are often prescribed following surgery, an injury, or to manage a disease like cancer. However, there has been a dramatic increase in the prescription of opioids for chronic pain such as back pain or

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[215] https://www.drugabuse.gov/publications/drugfacts/marijuana
[216] https://www.cdc.gov/nchs/data/hus/2019/020-508.pdf
[217] https://www.cdc.gov/drugoverdose/pubs/related-publications.html
[218] https://www.cdc.gov/drugoverdose/epidemic/index.html

osteoarthritis, "despite serious risks and the lack of evidence about their long-term effectiveness."[219] Prescription opioids are highly addictive, and once addicted it is incredibly difficult to stop using. As many as one in four patients receiving long-term opioid therapy in a primary care setting struggle with an opioid addiction.[220] Common prescription opioids are Methadone, Oxycodone (OxyContin), Hydrocodone (Vicodin), and Benzodiazepines such as alprazolam (Xanax) and diazepam (Valium).

Fentanyl produced pharmaceutically is a synthetic opioid used to treat severe pain. It is 50 to 100 times more potent than morphine. However, the increase in overdose has been linked to illegally made fentanyl which has a heroin-like effect.[221] The CDC reports that rates of overdose deaths involving synthetic opioids other than methadone, which includes fentanyl and fentanyl analogs, increased over 16% from 2018 to 2019. Overdose deaths involving synthetic opioids were nearly 12 times higher in 2019 than in 2013."[222] Heroin is an illegal and highly addictive drug that is typically injected, and heroin use increases the risk of serious infections like HIV, Hepatitis C, Hepatitis B, and bacterial infections. Heroin use has increased by 5 times from 2010 to 2018.[223] This is problematic because heroin is typically used with other substances, which can increase the risk of an overdose.

The CDC released a report (2020) on drug overdose in the United States from 1999-2019.[224] The age-adjusted rate of drug overdose deaths involving synthetic opioids increased from 1.0 per 100,000 population in 2013 to 11.4 in 2019. The average annual increase rate was lower from 2017-2019 (9% per year) than 2013-2017 (75% per year). The age-adjusted rate of drug overdose deaths involving natural and semisynthetic opioids, like oxycodone and hydrocodone, increased from 1.0 per 100,000 population in 1999 to 2.7 in 2011, then increasing again to 4.4 in 2016 and 2017. The rates in 2018 (3.8) and 2019 (3.6) were lower than 2017.[225]

The Pennsylvania Health Care Cost Containment Council (PHC4) collects data for each calendar year (CY) on opioid overdose hospital admissions and opioid use disorder (OUD) hospital admissions. In CY 2019, there were 23.2 hospital admissions for an opioid overdose per 100,000 people and 293.2 hospital admissions with opioid use disorder per 100,000 people in Pennsylvania.[226] Lehigh county had a rate of 24.6 opioid overdose hospital admissions per 100,000 people and a rate of 336.9 hospital admissions with OUD per 100,000 people.

Opioid use while pregnant can have severe negative outcomes for the child, potentially resulting in Neonatal Abstinence Syndrome (NAS). NAS births occur "in a newborn who was exposed to addictive substances while in the mother's womb. The most common opiate drugs that

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[219] https://www.cdc.gov/drugoverdose/opioids/prescribed.html
[220] https://www.cdc.gov/drugoverdose/opioids/prescribed.html
[221] https://www.cdc.gov/drugoverdose/opioids/fentanyl.html
[222] https://www.cdc.gov/drugoverdose/opioids/fentanyl.html
[223] https://www.cdc.gov/drugoverdose/opioids/heroin.html
[224] https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf
[225] https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf
[226] Phc4.org/m/Opioids/

are associated with NAS are heroin, codeine, oxycodone (oxycontin), methadone and buprenorphine."[227] The effects of NAS usually occur within 48-72 hours of birth, suffering from withdrawal, low birth weight, tremors, vomiting, fever, and more. In Pennsylvania, there have been 5,596 NAS births from January 1, 2018 to March 6, 2021.[228] In 2018, Lehigh county had 13.8 NAS births per 1,000 births, 56 NAS births in total.[229]

As a result of the COVID-19 pandemic, the CDC issued a health alert on December 17, 2020 indicating an increase in fatal drug overdoses across the United States driven by synthetic opioids before and during the pandemic. The purpose of the report was to alert public health departments, healthcare professionals, medical examiners, and coroners of substance use increase and drug overdoses across the U.S. with "a concerning acceleration of the increase in drug overdose deaths, with the largest increase recorded from March 2020 to May 2020, coinciding with the implementation of widespread mitigation measures for the COVID-19 pandemic."[230] The alert indicated that overdose deaths increased 18.2% from the 12-month period between June 30, 2019 and May 31, 2020. Overdose deaths went from 74,185 in February 2020 to 75,696 deaths in March 2020 to 77,842 deaths in April 2020, which is the largest monthly increases documented since January 2015 when monthly provisional estimates began.[231] The report also claims that synthetic opioids are the primary driver of the increases in overdose deaths; "the 12-month count of synthetic opioid deaths increased 38.4% from the 12-months ending in June 2019 compared with the 12-months ending in May 2020."[232] Of the 38 jurisdictions in the U.S. with available synthetic opioid data, 37 jurisdictions reported increases in synthetic opioid overdose deaths, and 18 of the jurisdictions reported increases greater than 50%. Provisional state data is available based on records that meet certain data quality criteria. They should not be considered comparable with the final data and are subject to change. The 12 month-ending provisional counts of drug overdose deaths ending August 2020 for Pennsylvania is 5,008.[233] These numbers are underreported due to incomplete data and should not be assumed to be final. To prevent against the increase in overdose deaths, the CDC recommends states expand the use of naloxone with overdose prevention education; expand access to treatment for substance use disorders; intervene early with individuals at high risk for overdose; improve detection of overdose outbreaks.

"We haven't yet seen the full scope of the substance abuse impacts of the pandemic. We see signs that things have worsened over the last year, but the full impact of the isolation and stress on substance abuse will likely show up in the next year."

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[227] https://nj.gov/health/populationhealth/opioid/opioid_nas.shtml
[228] https://data.pa.gov/stories/s/9q45-nckt/
[229] https://data.pa.gov/Opioid-Related/Annual-Rate-of-Neonatal-Hospital-Stays-with-Withdr/drhe-nauc
[230] https://emergency.cdc.gov/han/2020/han00438.asp
[231] https://emergency.cdc.gov/han/2020/han00438.asp
[232] https://emergency.cdc.gov/han/2020/han00438.asp
[233] https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm

Overdose

Overdose has been discussed previously, as it is a growing concern with prevalence rates increasing, especially during the pandemic.[234] Drug overdose deaths are the leading contributor to premature death and are largely preventable.[235] Additionally, since 2000, the rate of drug overdose deaths has increased by 137% across the county, which can be largely attributed to opioids, as there has been a 200% increase in opioid overdose deaths since 2000.[236] The NORC, National Opinion Research Center, reports on drug overdose deaths in the United States.

From 2015-2019, there was a rate of 28.7 drug overdose deaths per 100,000 people in the U.S. aged 15-64 years old.[237] In Pennsylvania, the rate was 53.3 per 100,000 population. In Lehigh county, the rate was 39.4 overdose deaths per 100,000 people. The CDC also published a drug overdose death report for 1999-2019 in December 2020. They report that the age adjusted rate of drug overdose deaths in 2019 was 21.6 per 100,000, which is higher than in 2018 (20.7 per 100,000).[238]

Adults ages 35-44 had the highest rate of drug overdose deaths of any age group in 2019 (40.5 per 100,000 population). Increasing from 2012, drug overdose deaths involving cocaine increased from 1.4 to 4.9 per 100,000 population in 2019 and those deaths involving psychostimulants with abuse potential, such as methamphetamine and amphetamine, increased from 0.8 to 5.0 per 100,000 population, more than 6-fold.[239] As of 2018, Pennsylvania ranks 4 overall for age-adjusted drug overdose deaths in the United States.[240] During this time, Pennsylvania had 4,415 drug overdose deaths, of which 65% involved opioids (2,866 deaths).[241]
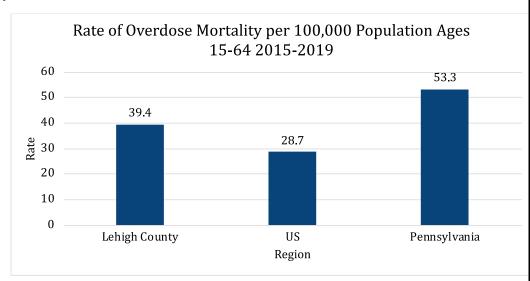

Figure 59

[234] https://emergency.cdc.gov/han/2020/han00438.asp
[235] https://www.countyhealthrankings.org/
[236] https://www.countyhealthrankings.org/
[237] https://opioidmisusetool.norc.org/
[238] https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf
[239] https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf
[240] https://www.cdc.gov/drugoverdose/data/statedeaths/drug-overdose-death-2018.html
[241] https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state

Stigma

Stigma is another important component to substance use disorder regarding usage and receiving or accessing help. Stigma is defined as "a strong feeling of disapproval that most people in a society have about something."[242] Stigma may be a barrier to seeking help for someone suffering from substance use due to fear of disapproval toward the substance use from family or friends. St. Luke's has worked with our own staff and other community organizations to inform people about stigma and how it can be minimized to help the most amount of people.

In the Fall of 2019, a stigma reduction survey was sent to all the campuses whose employees are directly related to substance use disorders (SUD) as part of the Opioid Stewardship Program, with 2,898 of 4,500 inpatient and outpatient network providers, nurses, and support staff received and completed the confidential stigma survey and education. Stigma campaigns are being piloted with phase two involving the entire network. Piloting provides the network SUD committee a chance to review the strategies monthly for how best to improve the internal and external environment to support SUD while enhancing infrastructure and the opportunity to operationalize network wide.

Beginning in the Fall of 2020, St. Luke's Rural Community Opioid Response committee partnered to develop Community Stigma Presentations. With the presentations, we have been able to reach 299 people as of December 2021. The stigma education included partners such as child development organizations, business organizations, churches, first responders, and mental health service organizations.

Naloxone

Naloxone is a drug that can quickly reduce the effects of an opioid overdose. The National Institute of Drug Abuse defines naloxone as "an opioid antagonist—meaning that it binds to opioid receptors and can reverse and block the effects of other opioids. It can very quickly restore normal respiration to a person whose breathing has slowed or stopped as a result of overdosing with heroin or prescription opioid pain medications."[243] Naloxone is safe and can be administered in three ways: injected, auto injected, or as a nasal spray. It is important for a variety of people to understand how to administer naloxone as it can quickly save someone's life. In response to opioid use and substance use, St. Luke's was awarded a Health Resource Service Administration (HRSA) Rural Community Opioid Response Planning (RCORP) grant in 2018 to work within a consortium to improve OUD prevention, treatment, and recovery response. With the grant, along with funding from Lehigh County Authority on Drugs and Alcohol to fund our Sacred Heart Initiative, St. Luke's ran an urban (St. Luke's Sacred Heart) and rural (St. Luke's Miners Campus) pilot, which has educated and distributed naloxone to 730 and 255 people, respectively.

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[242] https://dictionary.cambridge.org/us/dictionary/english/stigma
[243] https://www.drugabuse.gov/drug-topics/opioids/opioid-overdose-reversal-naloxone-narcan-evzio

Warm Hand Off

A warm hand off is a process that has been implemented in St. Luke's and defined as "a transfer of care between two members of the health care team, where the handoff occurs in front of the patient and family. This transparent handoff of care allows patients and families to hear what is said and engages patients and families in communication, giving them the opportunity to clarify or correct information or ask questions about their care."[244] Screening, Brief Intervention, and Referral to Treatment (SBIRT) is another approach adopted in St. Luke's care. SBIRT is used for early intervention in substance use disorders to quickly assess the severity of substance use and identify the appropriate level of care.[245] During CY 2021, a total of 2,637 patients have received full SBIRT at 11 of St. Luke's campuses. Of those SBIRT patients, 56% have been referred with warm hand off and 32% have entered substance use treatment.

Opioid Encounters

While opioid use and overdoses have been increasing, especially in relation to the COVID-19 pandemic, St. Luke's has been rising to meet the needs of the community with support services including: Stigma training, naloxone education and distribution, SBIRT, and warm hand offs. From July 2019 to January 2021, St. Luke's has encountered 6,319 opioid use disorder cases and 2,097 overdose encounters. Encounters have fluctuated each month for both Opioid Use Disorder (OUD) and overdose, with no significant changes.

Health Outcomes

In the 2021 Robert Wood Johnson Foundation County Health Rankings, Lehigh county ranks 13 overall in Pennsylvania for health outcomes. It is ranked among the healthiest counties in Pennsylvania in the 75-100th percentile. America's Health Ranking ranks Pennsylvania 34 out of 50 for health outcomes. For both organizations, a ranking closest to 1 indicates healthier outcomes.

Morbidity, Mortality, and Life Expectancy

Morbidity, mortality, and life expectancy are key health outcomes that help us to determine the overall health of the populations we serve. 2021 Robert Wood Johnson Foundation County Health Rankings data reports a premature death health outcome, which measures the age-

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[244] https://www.ahrq.gov/patient-safety/reports/engage/interventions/warmhandoff.html
[245] https://www.samhsa.gov/sbirt

adjusted years of potential life lost before age 75 per 100,000 population. Years of potential life lost rate in Lehigh county is 6,400 deaths per 100,000 which is better than Pennsylvania (7,500) but worse than U.S. top performers (5,400), indicating there is room for improvement in mortality outcomes among residents surrounding St. Luke's Allentown and Sacred Heart campuses and Star Community Health. Lehigh county is, however, improving in the trend of premature death over the last two decades.[246]

According to the CDC, the average life expectancy from birth in the U.S. is 78.8 years.[247] The Robert Wood Johnson County Healthy Rankings measures life expectancy as an age-adjusted, average number of years a person can expect to live.[248] In Pennsylvania, the life expectancy is 78.4 and the range of life expectancy in the counties of Pennsylvania is 74.9-83. Life expectancy in Lehigh county is 79.6 and 80.1 in Northampton county.

Low birthweight is another health outcome that can contribute to life expectancy. Low birthweight is measured by the percentage of live births who are under 2,500 grams (5 pounds, 8 ounces), which can be an indicator for future health problems such as growth problems, cardiovascular disease, respiratory conditions, and visual, auditory, and intellectual impairments.[249] The overall low birthweight percentage is 8% in Pennsylvania and 8.2% in Lehigh county. The low birthweight percentage for U.S. top performers is 6%.

COVID-19 has also impacted mortality rates around the world. While we have yet to understand the impact the premature death rate due to pandemic, as of the end of December 2021 there were more than 57 million confirmed cases in the United States and more than 800,000 deaths, a mortality rate of 1.4%. In Pennsylvania, there were 2,119,464 cases reported (16,555 per 100,000), 36,968 deaths, and a mortality rate of 1.7%. In Lehigh county, there were 67,438 cases reported (18,320 per 100,000), 1,054 deaths, a mortality rate of 1.6%.
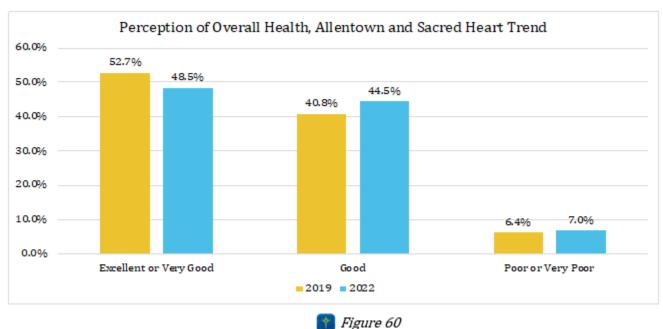
Perceptions of Health

It is important to assess a community's perceived sense of health status to interpret their overall well-being, as well as highlight areas where health education would benefit the community. According to the 2022 CHNA survey, most individuals in the service area reported overall good health, with 48.5% excellent or very good, 44.5% good, 7.1% poor or very poor health. These findings both align with the network as well as previous years.

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[246] https://www.countyhealthrankings.org/
[247] https://www.cdc.gov/nchs/fastats/life-expectancy.htm
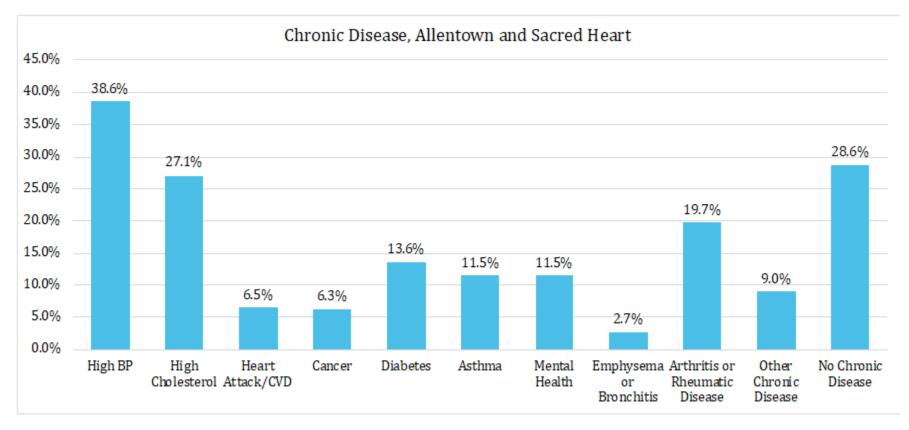[248] https://www.countyhealthrankings.org/
[249] https://www.countyhealthrankings.org/

Figure 60

Chronic Disease

A 2020 study analyzing data from the 2018 National Health Interview Survey (NHIS) concluded that more than half of all U.S. adults have at least one chronic disease, and more than 1 in 4 have multiple chronic conditions.[250] Among the most common chronic conditions, diabetes, hypertension, and hyperlipidemia frequently plague U.S. adults leading to a myriad of health complications and a heavy cost to the healthcare system. The CHNA survey results conveyed that the highest percentage of Allentown, Sacred Heart, and Star Community Health service area respondents have high blood pressure (38.6%), followed by high cholesterol (27.1%), and arthritis or a rheumatic disease (19.7%), while 28.6% of respondents reported to not have any chronic disease. For respondents age 45 and older, only 23% reported they did not have a chronic disease of any kind.

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[250] https://www.cdc.gov/pcd/issues/2020/20_0130.htm

Figure 61

Diabetes

According to the 2020 CDC National Diabetes Statistics Report, an estimated 34.2 million Americans (13.0% of all U.S. adults) have diabetes. Of all diabetics, both type 1 and type 2, 90 to 95% are type 2.

Additionally, 21.4% of adults with diabetes were not aware they had diabetes and thus it went undiagnosed. According to the 2017 Behavioral Risk Factor Surveillance System (BRFSS), 11.1% of adults in Lehigh county aged 18 years and older have been diagnosed with diabetes.[251] Figure 62 compares Lehigh county diabetes diagnosis rates to other service area counties and the U.S. overall.

Of all Allentown, Sacred Heart, and Star Community Health CHNA survey respondents, 13.6% have diabetes. When broken down by income, respondents whose household income is $15,000-$24,999 have the highest rates of diabetes (19.3%) and respondents whose household income is $60,000 and above have the lowest rates (11%). Respondents who make less than $40,000 have the highest rates of diabetes.

Figure 62

Figure 63

[251] https://chronicdata.cdc.gov/500-Cities-Places/PLACES-Local-Data-for-Better-Health-County-Data-20/swc5-untb/data

Hypertension

Figure 64

Hypertension is defined as having a blood pressure that is at or above a systolic value of 130 mm Hg, which measures the pressure in your arteries when your heart beats,[252] and a diastolic value of 80 mm Hg, which measures the pressure in your arteries when your heart rests between beats. In comparison, a normal blood pressure is less than 120/80 mmHg. Data regarding hypertension also includes individuals who are taking medications for hypertension that would otherwise be uncontrolled. According to the CDC 2019 report, the crude prevalence of hypertension in U.S. adults aged 20 and over is 49.6%. According to the 2017 BRFSS, 31.2% of adults in Lehigh county aged 18 years and older have been diagnosed with high blood pressure.[253] Figure 64 compares Lehigh county hypertension diagnosis rates to other service area counties and the U.S. overall.

Of all Allentown, Sacred Heart, and Star Community Health CHNA service area respondents, 38.6% have high blood pressure. When broken down by income, respondents whose household income is $25,000-$39,999 have the highest rates of high blood pressure (45%) while respondents whose household income is less than $14,999 have the lowest rates (34.5%). It is important to note that all of these rates are relatively high, regardless of income.

Figure 65

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[252] https://www.cdc.gov/bloodpressure/about.htm
[253] https://chronicdata.cdc.gov/500-Cities-Places/PLACES-Local-Data-for-Better-Health-County-Data-20/swc5-untb/data

Hyperlipidemia

Hyperlipidemia, or high cholesterol, is defined as a total serum cholesterol at or above 240 mg/dL, which stands for milligrams per deciliter and is a unit of measure that shows the concentration of a substance in a fluid. Data regarding hyperlipidemia also includes individuals who are taking medications to control their high cholesterol. According to the 2019 CDC report, 26.7% of U.S. adults aged 20 and over have been diagnosed with hyperlipidemia; that is more than 1 in 4 U.S. adults. According to the 2017 BRFSS, 33.5% of adults in Lehigh county aged 18 years and older, who have been screened in the past 5 years have been diagnosed with high cholesterol.[254] Figure 66 compares Lehigh county hyperlipidemia diagnosis rates to other service area counties and the U.S. overall.

Of all CHNA respondents from the Allentown, Sacred Heart, and Star Community Health service area, 27.1% have high cholesterol. When broken down by income, respondents whose household income is $40,000-$59,999 have the highest rates of high cholesterol (31.6%) and respondents whose household income is $15,000-$24,999 have the lowest rates (25.7%).
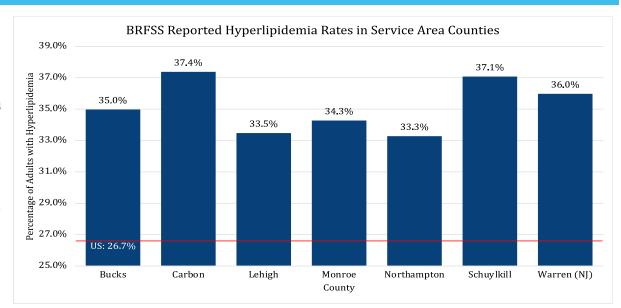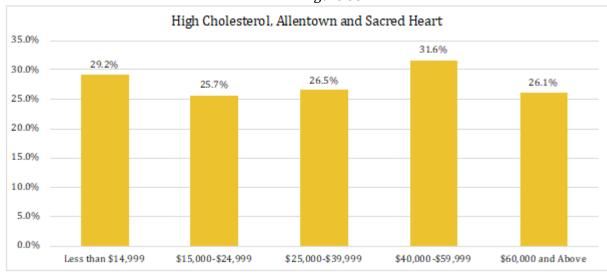

Figure 66

Figure 67

[254] https://chronicdata.cdc.gov/500-Cities-Places/PLACES-Local-Data-for-Better-Health-County-Data-20/swc5-untb/data
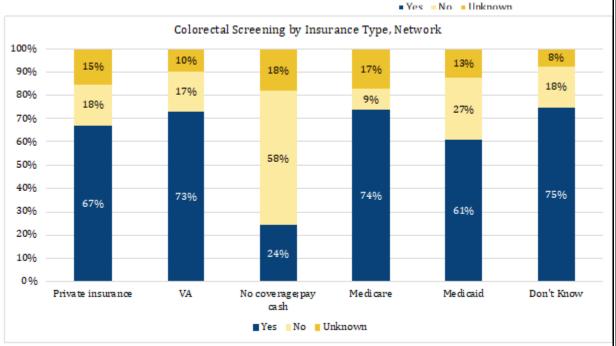
Cancer

In the U.S., 1.7 million people are diagnosed with cancer each year and comes with an estimated healthcare cost of $174 billion.[255] Cancer is the 2nd leading cause of death nationally with over half a million deaths each year.[256] According to the National Cancer Institute, cancer incidence in the U.S. is 448.7 per 100,000.[257] Pennsylvania has a cancer incidence of 484.6 per 100,000 which falls higher than the U.S. overall. There are certain risk factors that increase one's chance of getting cancer. Among them, include being overweight or obese, smoking and secondhand smoke exposure, exposure to sun and tanning beds, excessive alcohol use and some infectious diseases. These health behaviors have been discussed in earlier sections of this document and are also discussed in detail, as they relate to cancer, in the St. Luke's Cancer Needs Assessment (CNA). The CNA helps set the strategy around cancer outreach and education in our communities.

Colorectal Cancer Screening, Allentown and Sacred Heart

Figure 68

In order to be considered up to date with screenings for this analysis, respondents must have had a screening date fall in the recommended time frame for their screening type (Figure 70). If a respondent was missing an answer to one of the questions, their screening status was marked "Unknown." The CHNA survey asked respondents ages 50-74 to indicate their most recent colon cancer screening. Of all Allentown, Sacred Heart, and Star Community Health service area respondents, 69.7% have been screened, 14.9% have never been screened, and 15.3% are unknown.

Colorectal Screening by Insurance Type, Network

Figure 69

255 https://www.cdc.gov/chronicdisease/about/costs/index.htm
256 https://www.cdc.gov/chronicdisease/resources/publications/factsheets/cancer.htm
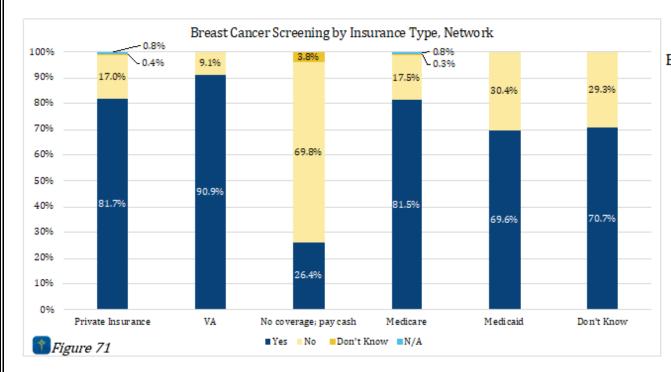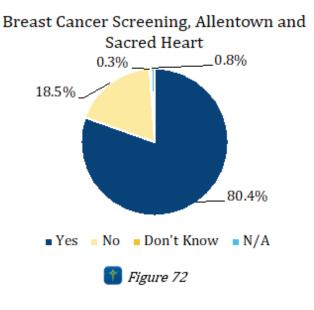257 National Cancer Institute's State Cancer Profiles, 2013-2017

Time Frame for Colorectal Screening based on Screening Type	
Colonoscopy	Within 10 years
Sigmoidoscopy	Within 5 years
Stool Blood Test (i.e.: FIT/FOBT)	Within 1 year

The CHNA survey also assesses colon cancer screening by insurance type to uncover any disparities and perhaps see if insurance is a barrier to cancer screenings. A large percentage (58%) of respondents ages 50-74 who do not have insurance have never been screened for colon cancer. Since colon cancer can be prevented or caught early with screenings, this is a large gap in care. Additionally, 27% of respondents who use Medicaid have never been screened. Network data is used due to small sample size by campus.
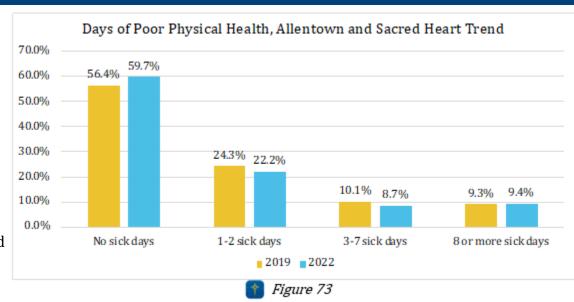
Figure 70

Respondents were also asked about breast cancer screening and we compared breast cancer screening rates to insurance. Of all Allentown, Sacred Heart, and Star Community Health respondents ages 40-74 years old, 80.4% had a mammogram, 18.5% have not, 0.3% do not know, and 0.8% was not applicable. When looking at breast cancer screening by insurance, only 26.4% of respondents who do not have insurance had a mammogram, which is drastically lower than any other type of insurance. The network data is used for insurance due to small sample size.

Figure 71

Figure 72

83

Days of Poor Physical Health

According to Healthy People 2030, daily physical activity can prevent disease, disability, injury, and premature death.[258] Robert Wood Johnson County Health Rankings assesses the number of poor physical health days people have because it can be a predictor for negative outcomes associated with health like unemployment, poverty, and mortality. The poor physical health days question is measured by the average number of physically unhealthy days in the past 30 days. In Pennsylvania, the average is 4.0 unhealthy days, with Lehigh county at 4.1. The majority of CHNA respondents indicated no sick days in the past 30 days (59.7%), 22.2% of respondents indicated 1-2 sick days, 8.7% indicated 3-7 sick days, and 9.4% indicated 8 or more sick days in the past 30 days.
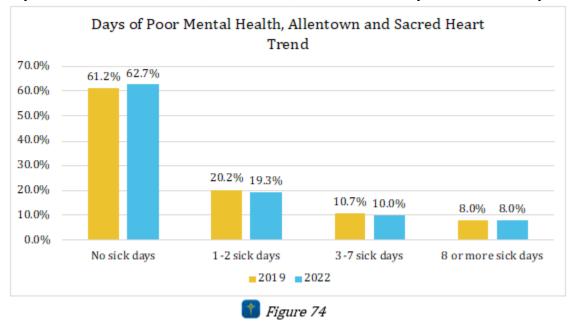

Figure 73

Days of Poor Mental Health

Poor mental health days is important to assess because it can be a good indicator for overall well-being. The Robert Wood Johnson County Health Rankings assess poor mental health days by the average number of mentally unhealthy days in the past 30 days.[259] The poor mental health days question is measured by the average number of mentally unhealthy days in the past 30 days. In Pennsylvania, the overall average is 4.7 unhealthy days, with Lehigh county also at 4.7 days. The majority of CHNA survey respondents in the Allentown, Sacred Heart, and Star Community Health service area indicated no mentally unhealthy days in the past 30 days (62.7%), 19.3% of respondents indicated 1-2 sick days, 10% indicated 3-7 sick days, and 8% indicated 8 or more sick days in the past 30 days.

[258] https://health.gov/healthypeople/objectives-and-data/browse-objectives/physical-activity
[259] https://www.countyhealthrankings.org/app/new-jersey/2021/measure/outcomes/42/description

Figure 74

Unintentional Injury

In 2019, the United States had 52.7 unintentional injury deaths per 100,000 population, which was the third ranked cause of death.[260] In 2018, there were 24.5 million visits to the emergency room for unintentional injuries and in 2016, there were 39.5 million visits to physician offices for unintentional injuries.[261] Unintentional injuries are unplanned and preventable when using proper safety precautions; they are also a substantial contributor to premature death. When broken down further for the United States, there were 12 per 100,000 population unintentional fall deaths, 11.5 per 100,000 population motor vehicle traffic deaths, and 20 per 100,000 population unintentional poisoning deaths.[262] In Pennsylvania, the unintentional injury death rate was 67.1 and Lehigh county was slightly lower at 65.5 per 100,000 population.[263] Healthy People 2030 has set objectives for injury deaths because unintentional injury deaths are so prominent. Some of which are to reduce unintentional injury deaths, reduce deaths involving opioids, and to reduce emergency department visits for nonfatal injuries and unintentional injuries.

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[260] Wonder.cdc.gov
[261] https://www.cdc.gov/nchs/fastats/accidental-injury.htm
[262] Wonder.cdc.gov
[263] wisqars.cdc.gov/

COVID-19 Impact

·············· COVID-19 ··············

In December 2019, the SARS-CoV-2 virus (i.e., COVID-19), was discovered in Wuhan, China and quickly spread across the world. COVID-19 spreads when an infected person breathes out droplets that contain the virus, which can then be breathed in by other people or land on their eyes, nose, and mouth, resulting in quick transmission from person to person.[264] On March 11, 2020, the World Health Organization declared COVID-19 a pandemic, resulting in worldwide shutdowns of workplaces, schools, and stores. To stop the transmission of the virus, the CDC recommended wearing a mask indoors, social distancing at least 6 feet away from other people, and to get vaccinated as they became available.[265] Many pharmaceutical companies worked on vaccines to fight the virus and multiple vaccines were approved by the Food and Drug Administration (FDA) across all age groups and were readily available to everyone in the U.S. On July 27, 2021, the CDC recommended stricter guidelines in response to the Delta variant, which showed to be more contagious and caused more severe illness compared to the other variants of COVID-19. In late 2021, the Omicron variant emerged, proving to be more contagious than the other variants of COVID-19, but not necessarily more deadly.[266] The most common symptoms of COVID-19 include fever or chills, cough, shortness of breath, headache, new loss of taste or smell.[267]
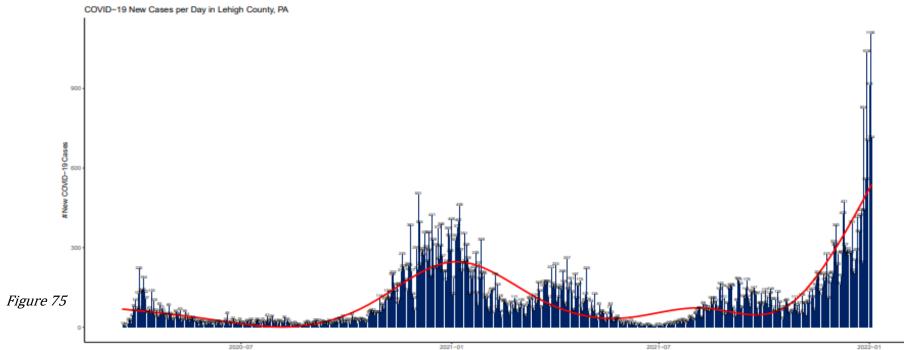
Lehigh county was one of the worst hit counties during the first two waves of the COVID-19 pandemic. During the first wave of the pandemic, the highest number of new cases in one day was 220. During the Fall 2020 wave, the highest number of new cases in one day was 202. By the beginning of 2022, with the new Omicron variant and high levels of transmission, the highest number of new cases in one day was 1,106 in Lehigh county (Figure 75).

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[264] https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html
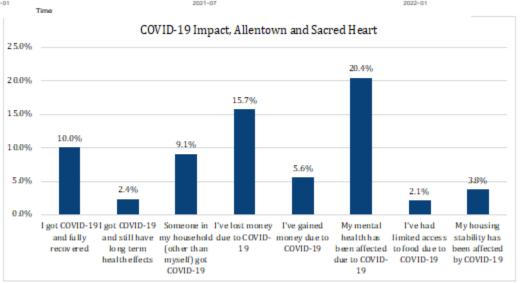[265] https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html
[266] https://www.cdc.gov/coronavirus/2019-ncov/variants/omicron-variant.html
[267] https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html

Figure 75

To get an understanding as to how COVID-19 impacted the Allentown, Sacred Heart, and Star Community Health service area we asked CHNA survey respondents to indicate if any of the categories in Figure 76 applied to them. Of those who indicated they had been impacted by COVID-19, the greatest number of respondents said their mental health has been affected (20.4%); 15.7% of respondents said they lost money due COVID-19; 10% said they had COVID-19 and fully recovered, while 9.1% said someone else in their household got COVID-19. However, 2.4% say they got COVID-19 and are still having long term effects. 2.1% have had limited food access and 3.8% have had housing instability due to the pandemic. 5.6% have gained money due to the pandemic.
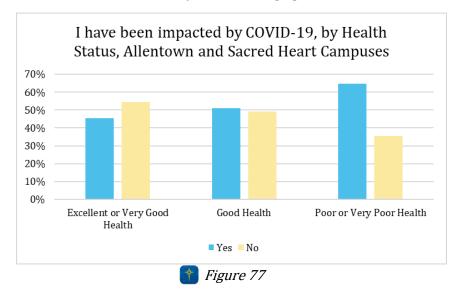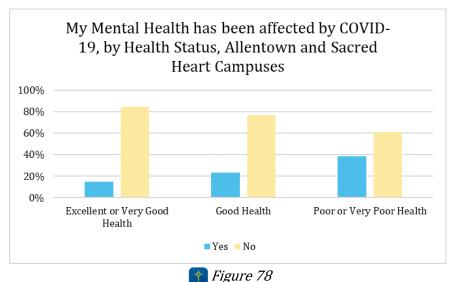
✦ Figure 76

The COVID-19 pandemic is of universal concern and has far-reaching impacts in our communities. On the surface, it appears as though approximately half of the population (51.6%) in our network has not been affected by the pandemic. Yet, when we examine these results further, we begin to understand that this is not the case for our vulnerable populations. Results from the CHNA survey in the Allentown, Sacred Heart, and Star Community Health service area shed light on some key differences among populations and highlight the impact that COVID-19 has on at-risk populations.

Overall Health and COVID-19

Overall health status can be an indicator of the ways COVID-19 affects individuals. Poor health, including cancer, illness, and chronic conditions, can make some individuals more susceptible to complications, hospitalization, and death compared to those in overall good health.[268] Survey respondents in the Allentown, Sacred Heart, and Star Community Health service area that reported excellent/very good health were less likely (46%) to report being impacted by COVID-19 compared to respondents reporting good health (51%) or poor/very poor health (65%). This is also the case when reporting the impacts of COVID-19 on mental health, with 15% of respondents in excellent/very good health, 23% in good health, and 39% in poor/very poor health reporting mental health issues due to the pandemic. The relationship between overall perceived health and the impacts of COVID-19 must be considered when analyzing the impact of the pandemic on the health of our already vulnerable populations.

Figure 77

Figure 78

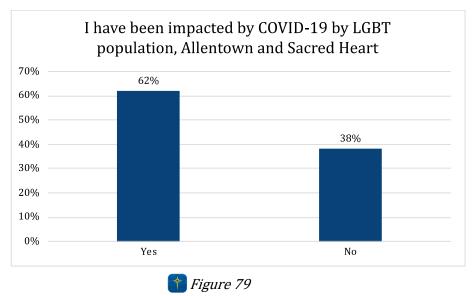[268] https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html

Gender and COVID-19

When assessing the impact of COVID-19 based on gender (i.e., sex assigned at birth), national findings indicate that women are more likely than men to worry about COVID-19 (e.g., if someone will get sick, financial burdens, children schooling). Almost 4 in 10 women (compared to 3 in 10 men) reported anxiety and other mental health concerns because of the pandemic.[269] Findings from the community health survey in the Allentown, Sacred Heart, and Star Community Health service area reported similar discrepancies between gender, with female respondents more likely to be impacted by COVID-19 (52%) than males (44%). These findings are further supported when looking at the impact of COVID-19 on mental health, with female respondents having their mental health impacted by COVID-19 at higher rates (23%) than males (16%).

LGBT and COVID-19

The LGBT population also faces significant challenges related to the COVID-19 pandemic, and nationally the LGBT population faces more economic hardships and mental health issues than their peers.[270]
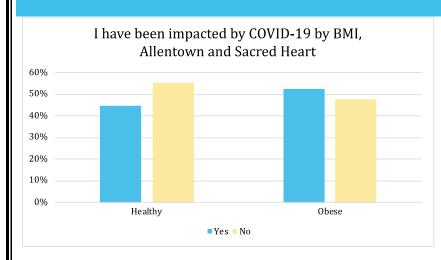
Survey results from the Allentown, Sacred Heart, and Star Community Health service area also reflect these differences, with more than 62% responding that they had been impacted by the pandemic, compared to 47.5% of non-LGBT respondents in the Allentown and Sacred Heart service area. In addition, 42% of the LGBT respondents said their mental health had been affected by the COVID-19 pandemic, compared to 20.4% of total respondents in the service area.

Figure 79

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[269] https://www.kff.org/coronavirus-covid-19/issue-brief/coronavirus-a-look-at-gender-differences-in-awareness-and-actions
[270] https://www.kff.org/coronavirus-covid-19/poll-finding/the-impact-of-the-covid-19-pandemic-on-lgbt-people/

Obesity and COVID-19

I have been impacted by COVID-19 by BMI, Allentown and Sacred Heart

Figure 80

Obesity puts people at risk for having serious complications and illness from COVID-19 and triples the risk of hospitalization when infected.[271] Obesity is shown to have negative impacts on COVID-19 recovery and outcomes. With a large population of the Allentown, Sacred Heart, and Star Community Health service area struggling with obesity (44.2%), the survey results reflect the relationship between obesity and COVID-19, with only 45% of respondents with a healthy weight being impacted compared with 52% of people living with obesity.

Ethnicity and COVID-19

The COVID-19 pandemic highlights the systemic issues of inequity in the public health sector, and the rates of illness and death are significantly higher for minority populations. While social determinants of health and health equity historically illustrate the marginalization of minority populations, issues such as discrimination, employment, education, and housing all contribute to the discrepancies in rates of illness and access to care during the pandemic.[272] When asked if the COVID-19 pandemic had impacted their lives, 61% of Hispanic respondents in the Allentown, Sacred Heart, and Star Community Health service area said yes, compared to 46% of non-Hispanic respondents.

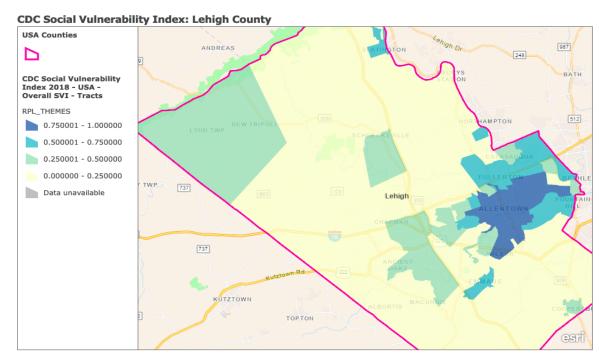[271] https://www.cdc.gov/obesity/data/obesity-and-covid-19.html
[272] https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html

Income and COVID-19

Income is often seen as one of the most significant social determinants of health, as financial status either provides or denies access and opportunity to everything from housing to education to healthcare. Income also correlates with the impact of COVID-19 on individuals, and a recent study in the Journal of the American Medical Association found that income and COVID-19 illness and mortality rates are correlated with income.[273] These findings were also seen in our community health survey in the Allentown, Sacred Heart, and Star Community Health service area, with 59% of respondents earning $14,999 or less responding that they were impacted by COVID-19, compared to 47% of respondents making $60,000 and above.

Social Vulnerability

Figure 81 displays the CDC Social Vulnerability Index map, which considers factors such as socioeconomics, housing/transportation, language barriers, etc. in determining how vulnerable a population is to an unforeseen disaster, like COVID-19. Social vulnerability is defined by the CDC as "the resilience of communities (the ability to survive and thrive) when confronted by external stresses on human health, stresses such as natural or human-caused disasters, or disease outbreaks."[274] Reducing social vulnerability can minimize the impacts of stressors, disasters, and decrease human suffering and economic loss. The index is scored from 0 (lowest vulnerability) to 1 (highest vulnerability). In the map below, Lehigh county has generally low social vulnerability Census tracts, with the exception of Allentown and surrounding tracts.

Lehigh County PA, data.pa.gov, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA

Figure 81

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[273] https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2779417
[274] https://www.atsdr.cdc.gov/placeandhealth/svi/at-a-glance_svi.html

Lehigh county's overall Social Vulnerability Index is 0.64, indicating moderate to high vulnerability. In all categories, Lehigh county had moderate to high vulnerability, with minority status as the highest vulnerability. Several of these factors are associated with higher rates of COVID-19 infection.[275] Some of the most vulnerable populations during the pandemic crisis included the homeless population, who faced challenges being exposed to COVID-19 and not having private shelter to quarantine; school-aged children and their parents who had to undertake the momentous task of virtual learning, most for the very first time; those experiencing mental/behavioral health problems or substance use disorder, as challenging times not only exacerbated these issues but exhausted the amount of resources available to deal with them.

Figure 82

Through key informant interviews, we learned that many pre-COVID-19 problems, especially regarding economic inequities and psychological health have been exacerbated:

Lehigh Social Vulnerability	
Overall	0.64
Socioeconomic	0.4
Household Composition and Disability	0.51
Minority Status and Language	0.87
Housing Type and Transportation	0.72

"I have employees that now officially, it costs them more to send their kid to day care on virtual schools day than they make. For people living pay check to pay check and really just making about minimum wage and maybe a little more, even if they have benefits, to arrange for that child care now and hours of working creates a huge problem for the work force. Again, these are members of the community. A majority of the workers I have in Allentown live in Allentown."

"And post-COVID, I would say that these challenges are magnified, but that we add to them fear, which complicates matters more... Afraid of being deported if they seek medical care, afraid of the medical bill they'll receive when they get medical care, afraid of a ventilator, afraid of their business failing, afraid of numerous, numerous fears I think come to light. Many people have the fear of being forgotten—'if my family doesn't visit me often now, will my family ever come back when [COVID] isn't here?'. The isolation fear... There is a whole lot of fear right now, and I think that's immobilizing for some groups within our community."

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[275] https://www.sciencedirect.com/science/article/pii/S0749379720302592

But where there is despair and darkness, there is also a glimmer of hope and light. The COVID-19 pandemic did a great job of increasing a sense of belonging, care and support for one another within the Allentown community. One key informant noted:
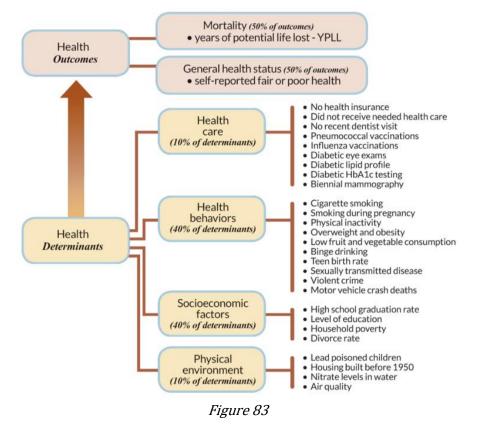
"I feel like people have really come out and been supportive of each other during this time. I have even seen it from people who normally don't connect with the community and doing things for the community willing to jump in due to COVID and feeling a sense of needing to take care of each other."

Conclusion

Through this extensive review of the primary and secondary data, it is evident that there are significant needs to address within our communities. For the upcoming three-year (2022-2025) cycle, St. Luke's University Health Network will continue to work toward addressing the health priorities identified network-wide to improve the community's overall health and well-being. The three main priorities identified include: reducing health disparities; preventing chronic disease; and improving mental and behavioral health.

To analyze our findings in these areas, SLUHN has adopted the categorization system from the Robert Wood Johnson Foundation (Figure 83). The social determinants of health shape the status of a person's health and provide guidance for community health priorities. When addressing the priority health needs, it is crucial to consider the social determinants of health and lifestyle behaviors to effectively tackle the service area's health disparities. Some significant survey findings, which are consistent with trends seen widely, are related to health outcomes and income, access to care for minority and marginalized populations, healthy eating (i.e., fruit and vegetable consumption), diabetes and other chronic illnesses, the opioid epidemic, and other substance use.

Figure 83

From our analysis of primary and secondary data, as well as the key CHNA informant interviews and work with our community members, we see significant issues facing our communities that impede healthy lifestyles. Our efforts in prevention, care transformation, research, and partnerships help support our work to promote sustainable programs and opportunities for our reach to focus on a wide range of health promotion and quality of life initiatives.

While there are many that need to be addressed, the results from the 2022 CHNA found the most pressing needs to be specifically in areas related to:

o COVID-19
o Access to Care
o Food Insecurity
o Obesity Reduction
o Physical Activity Promotion
o Opioids and other Substance Use
o Mental Health
o Housing
o Transportation

The needs discussed within the health categories outlined in this document will serve as our guide in creating a detailed campus-specific implementation plan to best address the specific needs of the St. Luke's Network service area using the three pillars of: Wellness and Prevention; Care Transformation; and Research and Partnerships. By using best practices and evidence-based public health models informed by lifestyle medicine, we will work collaboratively in partnership with our community and network partners to create a more equitable society with better health outcomes, especially among our most vulnerable populations such as our Hispanic communities, seniors, women, and children.

Appendix A

2022 CHNA Key Informant Interview

St. Luke's University Health Network (SLUHN) is a nationally recognized non-profit health network that has facilities serving counties in both Pennsylvania (Lehigh, Northampton, Carbon, Schuylkill, Bucks, Monroe) and New Jersey (Warren). As part of the Patient Protection and Affordable Care Act, all non-profit hospitals are required to conduct a Community Health Needs Assessment (CHNA) every three years. In order to accomplish our goals, St. Luke's is conducting key informant interviews to identify health needs within the community. Since you are a vital member of our community, you are being asked for your feedback to assist us in data collection. Your answers will be compiled by St. Luke's to determine health needs in the community.

Please note that your name will not be associated with your responses. Additionally, please complete your responses in a word document and email responses to the Community Health Needs Assessment Liaison for facilitated follow up during the interview.

1. Name:

2. Title:

3. Organization:

Please answer the following by including pre-covid and current covid impacts

4. How long have you been a part of this community and in what capacities?

5. When thinking about others you interact with here, do you feel a sense of community?

6. How would you describe your community?

7. What are the major needs/challenges within this community?

8. What are some of the challenges specific to your organization?

9. How do you feel this community has been successful in meeting its needs?

10. What improvements in policy and community infrastructure would assist you in meeting community needs?

11. Who are some of the key players in your community and what organization do they belong to?

12. What are some of the strengths and resources of your community?

13. Do you feel these strengths are shared and evenly distributed throughout the community? Please explain.

14. What are some concrete examples of strengths and challenges across the lifespan related to the following topics in your community?

    a. Health disparities/Access to care
       (example: access to medical, mental, dental and vision care)

    b. Healthy Living (example: diet and physical activity)

    c. Chronic Disease (example: diabetes, heart disease and cancer)

    d. Mental/Behavioral Health (example: substance misuse/use disorder, depression and anxiety)

15. What are the **top three issues** that need to be addressed in your community?

16. Any additional comments?

Appendix B

2022 CHNA Community Forum Invited Organizations- Allentown and Sacred Heart Campuses

- Air Products Foundation
- Allentown City Council
- Allentown Health Bureau
- Allentown School District
- Bradbury-Sullivan
- CACLV
- CAI INC.
- Center for Humanistic Change
- CHC
- City Center
- Community Action Development Corporation of Allentown
- Faces International
- Good Shepherd Rehabilitation Hospital
- Habitat for Humanity
- Kellyn Foundation
- Lehigh Conferences of Churches
- Lehigh Valley Community Foundation

- Lehigh Valley Health Network
- Muhlenberg College
- Neighborhood Health Centers of the LV
- PA State Representative
- PineBrook Family Answers LV
- Promise Neighborhoods LV
- Red Cross
- Ripple Community Inc.
- St. Luke's Parish Nursing
- Star Community Health
- The Literacy Center LV
- The Ortiz Ark Foundation
- Treatment Trends
- Unidos Foundation
- United Way GLV
- Volunteer Center LV
- WorkForce LV